

ready or not

A Teacher's Resource for r u ready? and Career Education



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Commonwealth of Virginia
Virginia Department of Education
Richmond, Virginia

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a Teacher's Resource for
r u ready? and Career Education

Developed by
Career Connections
and the
CTE Resource Center

for
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Virginia Department of Education
Richmond, Virginia

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Introduction

Education, particularly secondary education, is concerned with preparing students for the future and for their transition to adult roles as citizens, parents, and members of the workforce. Frequently, career options are unfamiliar territory for students considering life after high school. They may not recognize the relationship of continuing education programs to career interests and employability skills. They are likely to need help in understanding the process of career choice or in recognizing the need to be a manager of one's own career within the ever-changing workplace. Happiness at work is often a direct result of making wise decisions about a career choice. Whether such decisions are reached by meticulously charting potential career paths, or by the usual trial-and-error process of career "hopping," all students, including special-needs youth, require instruction to prepare them to enter and advance in their chosen careers—in the workplace arena where they are likely to spend most of their lives.

ready or not is a companion piece and implementation plan for *r u ready?*, the career guide developed by *Virginia Business Magazine* in cooperation with the Virginia Department of Education. Both of these career education publications are designed to shed light on the nature of career development and to encourage students to participate in activities that will enable them to gain insight into the importance of this critical decision-making time of their lives. The major concept is that the next stage of their life will happen anyway...whether they are ready or not. They can get ready through an action plan that is the result of guided career study and exploration, or they can let their life and career just happen.

ready or not provides a flexible plan for using the national and state career classification system. Emphasis is placed on identifying personal strengths and relating these to statewide career opportunities and requirements. This teaching plan helps students adapt to a different, and often difficult, world of work. Relationships among academic and career/technical competencies are underscored, particularly in connection with the Virginia Standards of Learning. Both *r u ready?* and *ready or not* prepare students for career highs and lows as these occur in the ebb and flow of the workplace and of individual lives.

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How to Use This Teaching Plan

ready or not is an implementation tool for teaching the magazine-formatted guide entitled *r u ready?* at the middle and/or high school level. The *r u ready?* guide and *ready or not* teaching plan may be taught or coordinated by a guidance counselor or an academic or career/technical teacher. The intent is for the local program administrator to work with business and industry organizations and individuals who represent specific career fields.

The primary purposes of *r u ready?* are to help teachers guide students through the decision-making process related to planning a career, to present the career classification system, and to apply this system to the many career opportunities in Virginia. In addition, the document contains helpful information on topics such as career decision-making, the job market, job-search skills, and postsecondary education. The Virginia Department of Education has distributed *r u ready?* to every 11th grader in Virginia's public high schools. To order additional copies of *r u ready?* and *ready or not*, refer to pages 83 and 85 of this teaching plan. It is important to coordinate presentation of both guides throughout the instructional period.

ready or not contains three major sections. Section I, "Mapping Your Course," includes "Objectives" with process questions, and "Activities." In Section I, students learn the process of career choice and conduct a self-inventory of interests, aptitudes, and skills.

In Section II, "Exploring Career Clusters," students explore in detail selected career clusters related to their interests, aptitudes, and abilities. A career cluster is a way of grouping occupations having a common core of knowledge and skills. The career cluster approach provides convenient "containers" of career information to present to students as they explore opportunities in Virginia. Within each career cluster, students also learn about the related pathways. For example, the career cluster of Hospitality and Tourism includes the pathways of lodging, food service, recreation, and attractions. A pathway is a broad, flexible subdivision of a career cluster that is specific enough to provide real-life occupational context. Within each pathway, students explore occupations, such as hotel/motel manager within the lodging pathway and the hospitality and tourism career cluster. Each career cluster description has four subsections. The first subsection, entitled "Inside Track," provides a brief description of the essence of each of the 16 career clusters. The next two subsections briefly describe the major "Trends" and "Considerations" involved with each cluster. The last subsection, "Discussion Questions," offers teachers a chance to begin a dialogue with their students about the career clusters.

Section III, "Traveling the Road" features career exploration activities and a student checklist, "The Next Step." The activities combines online interface and analysis of previously completed career study and analyses. Since the completion of the activities is dependent upon the students collecting information on their selected career cluster focus, students should refer to pertinent career cluster information from *r u ready?* and *ready or not*. The activities lead students to explore six career and education Web sites. In preparation for the Section III activities, teachers may wish to access the Web sites and familiarize themselves with these helpful career resources located on page 73.

Students should maintain all of their career work in a portfolio and complete the checklist entitled "The Next Step" on pages 75–76. All students enrolled in the unit or course should meet with a counselor, teacher, and/or person from the career field to discuss next steps toward a career—continuing exploration, work-based learning experiences, postsecondary education, and/or beginning employment in a pathway.

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Mapping Your Course



Finding the Who of You

Introduction

Consider the following dialogue with students: Who are you? A lot of people have a hard time answering that, even people well into adulthood. Still, your first thoughts may revolve around being a son or a daughter, a friend, an artist, an organized person, a dreamer, an animal lover, someone who loves the sound of a car engine. Think a little deeper. What kind of child or friend are you? How do you feel when you are working with clay, spending time with your dog, or fixing your car or truck? How do you feel when months have gone by and you haven't played your guitar? Can you work in an unorganized setting? What does all of this have to do with your career? Before you can find a career you love, you must understand the *who* of *you*. That will mean being honest about who you are and what you value.

To frame the context of self-understanding in terms of a career:

- Define the term *career*.
- Analyze the importance of work/career.
- Identify career education within the school curriculum, extracurricular activities, at home, and in the community.
- Analyze career as a personal choice.

Even if you already have a career in mind, it is wise to reexamine your personal values at this critical crossroad and make use of the most current resources available.

Objectives

1. Define the term *career*.

Definition should include different aspects of *career*, such as

- a progression of related jobs or work experiences that encompasses employment, continuing education, and personal growth
- an expression of lifestyle and personality
- a responsibility to family, community, and society
- a goal or aspiration.

Process Questions

Can a career just happen? Or do you have to plan it?

Notes

What are the advantages and disadvantages of career planning?

As a student, when should you start planning your career?

What are some reasons that people change careers?

What might a change of career entail?

What are some of the consequences of failing to plan a career?

Can you name some events that might spark future career planning as you get older?

2. Analyze the importance of work/career.

Identification should include

- definitions of *work* and *job*
- potential benefits of work/career
- personal reasons for working.

Work: the physical or mental effort or activity directed toward the production or accomplishment of an objective. Work means different things to different people; one person's work is another's play.

Job: A specific situation in which a person performs particular tasks or duties (work) for compensation. A person is employed to work at a specific job.

Process Questions

Aside from income, what else can a job provide?

What is the difference between job and career?

How would you describe a good job? A bad job?

3. Identify career education within school curriculum, in extracurricular activities, at home, and in the community.

Identification should include personal examples of direct and indirect career education occurring in each of the four settings:

- school
- extracurricular activities
- home
- community

Process Questions

What are some examples of commonly available sources through which you may learn more about careers?

What are the benefits of exploring a variety of activities and interests?

Why do you think career education is often not emphasized in the academic education setting? Would you like to see that change? Explain.

4. Analyze career as a personal choice.

Analysis should involve each student taking the initiative to understand his or her personality/character traits. Some means for self-analysis are

- introspection
- personal value inventory
- peer response
- personality assessment
- consultation with parent/guardian
- consultation with teachers/counselors.

Process Questions

What does understanding your personality have to do with making career decisions?

Why is it important to listen to advice from others?

What is the most important source of advice and information for you: family, friends, media, or school? Other sources? Explain.

Why is it important to formulate your own decisions once you have considered advice from others?

What might be the consequences of allowing someone else to “make up your mind” for you?

Activities

Activity: How We See Ourselves, How Others See Us

Have students construct a two-column list. In the left column, have students describe themselves using single adjectives and check off the words that they think others would agree with. In the second column, have students explain how others may have different impressions of them from how they view themselves. As a class, discuss the difference between how we perceive ourselves and how others perceive us.

Activity: The Good Stuff

Have students write a descriptive paragraph about three or more of their positive traits. Then have students explain how they express these traits (i.e., through service, sports, extracurricular activities, art, or hobbies). Now have them list a number of jobs in which they might be rewarded for expressing these traits. Teachers should emphasize the connection between personality and interests and the potential careers of their students.

Activity: Learning Is Everywhere

Have students identify examples of career education occurring in their daily lives, either directly or indirectly. Have them list several events that have taught some potentially valuable

career-building skills. After students have identified several examples of each, ask them the following questions:

- *Why is career education needed?*
- *What are the primary goals of education?*
- *Can a person have a job and not a career? Explain.*

Activity: Who Am I?

Have students complete an online personality self-assessment. Have students critique the assessment by

- gauging the accuracy of the assessment
- summarizing what they learned about themselves.

Resources for Self-Assessment (Other resources may be used.)**The Keirsey Temperament Sorter II**

<http://www.advisorsteam.com/user/ktsintro.asp>

Kuder: Virginia's Career Planning System

<http://va.kuder.com/>

Activity: Matchmaker: You and a Career

Give each student two notecards. On one notecard, have students write the names of three careers that interest them. Give each student a copy of the handout, "Career Value Descriptions." On the second notecard, have the students rank the 10 career values described on the handout (1 = highest/most important; 10 = lowest/least important).

Go around the room, and have each student read his or her list of job titles, and, as a group, assess the relationship between career interests and career value descriptions. In other words, you are trying to determine if job titles and descriptions fit the value system of the individual being assessed. If not, what is compromised? Why? Why is it important to understand compromise? Talk about possible short-term and long-term consequences of such compromise. Have students share stories about people they know or have heard about whose compromises have affected them in negative and in positive ways.

Activity: Nontraditional Careers

Have students visit <http://www.careerprospects.org>, click on "Think OUTSIDE THE CAREER BOX," and select the second bullet: "Male nurses? Female firefighters? Find opportunities in nontraditional careers." Give students plenty of time to browse this page and make notations about aspects of nontraditional careers that they find interesting. Have a classroom discussion about what they discovered. Points to talk about: Are students interested in a nontraditional career? Why or why not? Did they learn anything they did not know before?

Handout: Career Value Descriptions

Security

Security is important for everyone. If you rank the security value highly, it means that you prefer an occupation that is stable, predictable, and has some permanence rather than one that is risky, changeable, and subject to seasonal demands. You prefer to work for a well-established company, quite possibly in areas that are basic to human needs and not likely to become obsolete. For example, hospitals, military service, and civil service are areas that have a degree of stability and an ongoing need for employees.

Personal Integrity

If you rank personal integrity highly, you will not be satisfied with any type of work that does not reflect your personal morals and ethics. You may narrow your career choices to ones with high ethical standards and ones in which you can take pride.

Recognition

If you rank recognition highly, you prefer occupations that put you in the spotlight. Status and recognition can come from a variety of sources, such as power, intelligence, money, or social usefulness. Keep in mind, however, that status and recognition depend on how well you do your job, not on job title alone. Being in a position of recognition may also make you vulnerable to criticism.

Adventure

If you rank adventure highly, then trying out new ideas and taking thought-out risks appeal to you, as do occupations requiring you to travel to other cities, states, and countries. You would not be satisfied with a job that requires a rigid schedule or strict deadlines.

Economic Reward

If you rank economic reward highly, your primary purpose for working is to make money. People with high economic reward values spend many hours on the job. Sometimes their hard work in the pursuit of making money results in their having limited time for family, friends, social activities, and hobbies.

Self-Expression

If you rank self-expression highly, you value creativity. You want a career that will enable you to put your own ideas to work. You like to make your own choices and decisions regarding how to perform your work. Artists, writers, musicians, and actors share this value.

Helping Others

If helping others ranks highly, careers in teaching, medicine, social work, and the clergy may appeal to you. Some other pathways to consider are politics and protective services.

Relationships

If friendship and companionship rank highly, you will enjoy a job that involves working closely with others. Being part of a friendly and congenial work team appeals to you; working in isolation does not.

Leadership

If being in charge ranks highly, occupations that complement leadership skills may appeal to you. You prefer to plan and organize tasks for others to complete. You have no desire to take orders or to be assigned tasks. Entry-level leadership positions, though limited, can be found in many career fields. Be prepared to pursue higher education however, to develop your leadership skills.

Autonomy

If your freedom or independence ranks highly, you may enjoy entrepreneurial occupations. Freelance artists, writers, painters, tutors, and consultants pick their own working hours. Because they are independent workers, they can also pick and choose the company or individual(s) for whom they will work. However, independent workers do not receive company fringe benefits, such as sick pay, vacation time, life insurance, retirement, or hospitalization.

Looking at the Map

Introduction

This section encourages students to link what they know about their individual interests, values, and talents to career potential. Students will focus on the whole of *r u ready?* by

- outlining *r u ready?*
- explaining the relationship between a career choice and “living within your means”
- identifying personal career education strategies.

“Looking at the Map” emphasizes decision-making skills, organizational strategies, and planning. By following the activities in this section, students should begin to narrow the field of opportunity. A sample outline of *r u ready?* appears at the end of “Looking at the Map.”

Objectives

1. Outline *r u ready?*

The student’s informal outline should include the following headings along with brief descriptions of each. (Sample appears at the end of this section.)

- Letter from Governor Kaine
- Web Site Directory
- Want to learn about your career prospects?
- Virginia Career Resources Network
- Career Quiz
- Virginia Career VIEW
- Planning your career ‘trip’: KnowHowVirginia
- Do you know where you are going? KUDER...it’s how you get there.
- What is a career cluster?
- Sixteen career clusters
- Work-based learning opportunities
- Options to get ahead while still in high school
- Are you missing out on great career opportunities?
- On your mark, get set...teach!
- Managing your money on the road ahead
- Commonwealth Scholars: from competence to excellence
- Virginia colleges and universities

Notes

- Chef's students learn the ins and outs of catering
- Driving on your own
- IGNITE brings women and technology together
- Earn while you learn: the skinny on apprenticeship programs
- ATC: Advanced Technology Center
- Job vs. career
- Your résumé
- Making a good first impression
- Don't let senioritis steer you off the road to college
- Trade and technical schools: getting the right amount of education
- Take a look at the liberal arts
- What to bring to college
- Community colleges: a smart road to explore
- Military education options
- Looking for ways to help pay for the journey

Process Questions

After reading r u ready?, what new information did you learn?

What is the most interesting aspect of your career search?

Why?

Can you describe some unique jobs?

What do you think of women and men seeking careers that are usually associated with the opposite sex?

How are you planning for the next phase of your life?

2. **Explain the relationship between a career choice and the quote “the most humble thing in life is to live within your means. The sooner you learn it, the quicker you’re going to be successful.” —James Shepherd, in “Managing your money on the road ahead”**

Process Questions

Have you ever developed a budget?

Do you think it is important to have a savings account? Why, or why not?

What are the most important concepts you learned from the article “Managing your money on the road ahead”?

3. **Identify personal career education strategies after reading “Planning your career ‘trip’” and exploring the Web site www.knowhowvirginia.org.**

Process Questions

Can you name ways in which you are currently working toward your future career?

*Have you participated in or experienced any of the following?
If so, please describe.*

- *internship*
- *mentorship*
- *co-op education*
- *student organizations*
- *part-time job*
- *study abroad*
- *volunteer work*
- *Tech Prep programs*
- *job shadowing*
- *job fair*
- *media sources concerned with the job market and employment*

Notes

Activities

Activity: Dream Job

Without mentioning job titles, have students describe their dream job by addressing the following terms:

- personal goals
- financial goals
- workplace environment
- ethical concerns/personal values
- responsibility
- leadership roles
- recognition

After students write a sentence or two on each aspect, have them rank their responses based on importance. Field comments from the class, and discuss the relationship between personal values and making choices. This will foster more responsibility in students in determining what they want. It will also make them aware of the diverse nature of the workforce.

Activity: Either/Or

Give students a list of “either/or” questions to help them understand their priorities. Begin with “Which is more important to you...”

- earning a good salary or spending time with your family?
- being a big fish in a small pond or a small fish in a big pond?
- achieving awards and recognition or being well liked at work?
- having job security or the chance for rapid vertical mobility?
- maintaining low stress at work or tackling difficult jobs?
- being a good leader or being a good team player?
- being competitive or being supportive?
- working in the field or working behind a desk?
- helping others or helping your business?
- success now or success later?
- moving around or staying in one place?
- working for someone else or working for yourself?
- having a steady income or the chance for larger amounts all at once?

- being good at many different tasks or being an expert at one?
- being master of your domain or seeking out new challenges?”

Note: Most of the above are not opposites. Prioritizing values is crucial when both options are similarly desirable.

Using their responses, have students rank each of their answers from most important to least. If they already have a career in mind, encourage them to disregard the requirements of that career to gain an objective understanding of what they want without any preconceived notions that might be attached to that career.

Activity: Recap

Group students, and have each group deliver an oral report on one of the main topics from their outline of *r u ready?* .

Activity: Classifieds

Have students search the employment want ads. Have them bring to class only those entry-level jobs that interest them. At least one of those ads should be for a job they might be qualified for after graduation.

Activity: The Clubs

Have students investigate and make a list of the officially recognized student organizations and clubs currently existing at their school. Often, joining a club in a prospective field of interest can lead to networking and sharing occupational experience.

Activity: Career Day

Invite a local representative from the workforce, and have him or her address the following:

- high school experience
- career education experience
- how he/she attained current position
- work and training experience
- description of current position
 - duties/responsibilities
 - misgivings
 - opportunities
 - future plans

Notes

Have students critique the speaker and his or her job. Next, have students discuss topics that interested or affected them.

Activity: Hitting Home

Have students interview a working adult within their own family or community using the same topics and criteria as the “Career Day” activity. This will allow each student more opportunity to delve into specific information about a career and how that career may affect his or her life. It may also help make the student aware of career resources existing within his or her community or family.

Note: As a safety measure, tell students to conduct the interview in a non-isolated setting if interviewee is not a trusted family member or friend. Phone and e-mail interviews may be an option.

Sample Outline of *r u ready?*

r u ready? is a guide to careers and continuing education designed primarily for high school juniors. However, it is appropriate to other high school grade levels as well as middle school levels for beginning career exploratory activities. The following is a brief outline and explanation of each topic in the *r u ready?* directory.

1. **Letter from Governor Kaine**—Celebrates Virginia's educational standing in the nation
2. **Web Site Directory**—Provides an entire page of career, industry, job search, education, internship, tuition, volunteering, and military Internet resources
3. **Want to learn more about your career prospects?**—Highlights Career Prospects in Virginia, a full-service Web site that helps you navigate the world of work
4. **Virginia Career Resources Network**—Summarizes six of Virginia's best sources for career information
5. **Career Quiz**—A short quiz on important career concepts
6. **Virginia Career VIEW**—Provides information about careers, education, and how to connect to it all
7. **Planning your career 'trip': KnowHowVirginia**—Explains how KnowHowVirginia can help you plan your career
8. **Do you know where you are going? KUDER...it's how you get there.**—Outlines Virginia's Career Planning System available to all 7th–12th grade students, providing them with access to Internet-based career exploration and planning
9. **What is a career cluster?**—Explains that there are 16 career clusters that group what you like doing and what you are good at doing
10. **Sixteen career clusters**—Describes the career clusters with projections and resources:
 - A. Agriculture, Food, & Natural Resources
 - B. Architecture & Construction
 - C. Arts, A/V Technology, & Communications
 - D. Business, Management, & Administration
 - E. Education & Training
 - F. Finance
 - G. Government & Public Administration
 - H. Health Sciences
 - I. Hospitality & Tourism
 - J. Human Services
 - K. Information Technology
 - L. Law, Public Safety, Corrections, & Security
 - M. Manufacturing
 - N. Marketing, Sales, & Service
 - O. Science, Technology, Engineering & Mathematics
 - P. Transportation, Distribution, & Logistics
11. **Work-based learning opportunities**—Examines job shadowing, mentorship, internship, service learning, and cooperative education
12. **Options to get ahead while still in high school**—Talks about earning college credit, technical training, or industry certification while still in school
13. **Are you missing out on great career opportunities?**—Addresses nontraditional careers
14. **On your mark, get set... teach!**—Highlights the teaching profession and the "how-to's," including Internet resources
15. **Managing your money on the road ahead**—Features five steps to take to manage your money
16. **Commonwealth Scholars: from competence to excellence**—Explains the initiative that encourages and rewards students who follow a rigorous course of high school studies
17. **Virginia colleges and universities**—Lists the names and Web sites of every private, public, and community and junior college in Virginia
18. **Chef's students learn the ins and outs of catering**—Profiles Chef Damon Armstrong and his culinary arts students at the Norfolk Technical Center

19. **Driving on your own**—Outlines eight options after high school
20. **IGNITE brings women and technology together**—Explains the program of Inspiring Girls Now in Technology Evolution
21. **Earn while you learn; the skinny on apprenticeship programs**—Details apprenticeship and cooperative education programs and includes four Web sites
22. **ATC: advanced technology center**—Explains the program that arms students with specialized technology, engineering, and marketing skills
23. **Job vs. career**—Explains the difference between a job and a career and how to plan for a career
24. **Your résumé**—Provides information, resources, and an example for preparing your résumé
25. **Making a good first impression**—Explores the importance and how-to of making a good first impression
26. **Don't let senioritis steer you off the road to college**—Explains how to keep up the pace all through the “finish line” of your senior year in high school
27. **Trade and technical schools: getting the right amount of education**—Helps students explore career colleges
28. **Take a look at the liberal arts**—Explores a liberal arts education through the eyes of student, Ashlei N. Bobo
29. **What to bring to college**—Lists all the practical essentials to take to college
30. **Community colleges: a smart road to explore**—Highlights the reliability, affordability, convenience, and broad options offered by Virginia's 23 community colleges
30. **Military education options**—Examines the military as a means for attaining an education
31. **Looking for ways to help pay for the journey**—Provides detailed information and resources about scholarships, grants and loans, military student aid, and college savings plans

Planning the Journey

Introduction

Once students begin to identify their skills, values, and interests and gravitate toward a career cluster or pathway, there are a few practical concerns they should think about before they begin designing a particular career path.

This section focuses on job-market information and emphasizes real-world concerns. If the previous two sections are about imagining what is possible, this section is about providing some context and forming a plan so that goals can be realized.

“Planning the Journey” encourages research on topics in the economic and industrial climate of the local region and the ways these factors could influence the job market. It also allows students to begin thinking about their target income and level of training and education. There are only three objectives in this section, and yet students should consult them time and again when considering future occupations. Students should be taught

- to analyze income and cost-of-living considerations
- to determine worker characteristics currently sought by employers
- to analyze aspects of hiring trends.

Objectives

1. Analyze cost-of-living considerations.

Analysis should focus on current major factors that comprise “cost-of-living” in Virginia and the impact of these factors on a person’s ability to earn a living.

Process Questions

What is the relationship between salary/pay and consumer habits and goals?

What are some cost-of-living elements you can control?

What are some cost-of-living elements you cannot control?

What is meant by good credit rating, and what can it do for you? How can a bad credit rating hurt you?

What is debt? Savings?

Notes

2. Determine worker characteristics currently sought by employers.

Identification must include strong work ethic, positive attitude, independence and initiative, self presentation, flexibility, communication, and continuing education.

Process Questions

What are actions and behaviors that demonstrate a strong work ethic?

What does having a positive attitude mean in terms of work behavior?

How do you demonstrate independence and initiative at work?

What is the relationship between self-image and self-presentation skills?

How do you acquire and demonstrate flexibility and communication skills?

What are some forms of continuing education?

Why do employers seek out employees with the characteristics named above

Why are interviews just as beneficial for the applicant as they are for the employer?

What are some shortcomings of the interview process?

3. Analyze aspects of hiring trends.

Analysis should address the major factors in the job market, such as

- political climate
- geographical location
- economy
- consumer trends
- salary
- openings/closings
- job security
- job longevity
- training/education
- technology trends.

Process Questions

What are the major trends influencing business and industry today?

Aside from additional training, what is the value of a college degree today?

Of the job-market factors in the bulleted list above, which are the ones you can control and which are the ones you cannot?

Why or why not?

What is the World Trade Organization (WTO), and why are its meetings commonly protested?

What are the world's most powerful economic markets?

Why is it in the government's interest to educate its citizens?

How do immigration and naturalization policies affect the labor pool?

Activities

Activity: Cost of Living

Have students compose a list of “cost-of-living” items (e.g., cost of a gallon of milk, a dinner at a restaurant, a pair of dress shoes, tuition at a 4-year college, a 2-year community college, car payment and insurance, rent, costs associated with mortgage payment and insurance, health insurance, income tax percentage, social security percentage, and others). Divide the items among class members, and have them find the cost of each item 10 years ago and at present. Then have them project the cost of those same items 10 years into the future.

Note: In most cases, items should be specific (i.e., not just a car payment, but an average payment on a new Honda Civic or a Ford Escape Hybrid for example). To estimate payments, the students must take into account loans and interest rates.

Resources

Consumer Price Index: (Bureau of Labor Statistics)

<http://www.bls.gov/cpi/>

Federal Consumer Information Center

<http://www.pueblo.gsa.gov/>

Inflation Conversion Factors for Dollars 1665 to Estimated 2017: (Robert Sahr, Oregon State University)

<http://www.oregonstate.edu/cla/polisci/faculty-research/sahr/sahr.htm>

Car Payment Calculator

<http://carsdirect.com>

Real Estate Calculator

http://homefair.com/homefair/readart.html?art=bc_financial

Activity: Profile of Success

Have the class select several job titles and describe the personality traits associated with the workers who hold these jobs. Sample job titles might include but certainly are not limited to

- firefighter
- attorney

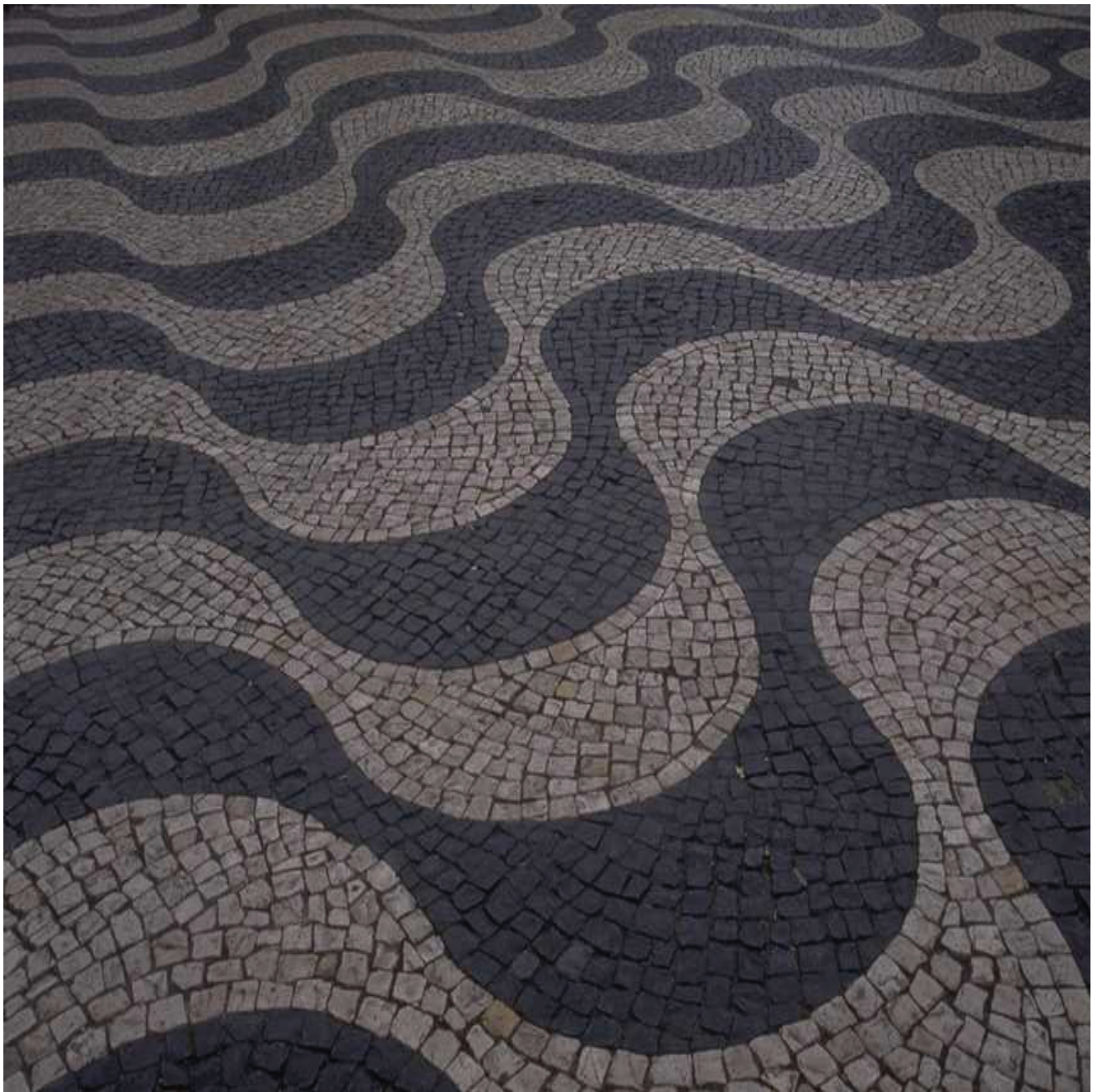
- medical doctor
- brick/stone mason
- advertiser
- marketing professional
- salesperson
- truck driver
- architect
- graphic artist
- electrician.

Reinforce the connection between personality and job skills by explaining that when members of the workforce have jobs that reflect their personality traits and values, they are more likely to keep those jobs and become successful.

Activity: Mock Interview

Conduct a mock interview. Select a panel of students to interview job applicants. Decide on the company and the company vision. Have the panel members form a list of questions for the applicants. Choose several students to interview for the job. Lead the class in a critique of the interview process, and form a list of *do's* and *don'ts*. To conclude the exercise, have the panel choose one of the applicants for the position. Have the class critique the panel's decision and decide if the best applicant was chosen.

Exploring Career Clusters



How to Use This Section

Objectives

The 16 Virginia career clusters reflect those defined by the United States Department of Education. Career clusters were created as a means of grouping occupations that have a core of common knowledge and skills which result in an occupational framework for organizing careers. By grouping occupations in this way, students may find it easier to see the connections among diverse occupations within the cluster. By understanding relationships that exist among occupations, students may subsequently broaden their interests, discover alternative career pathways, and envision career pathways that were not evident before their career cluster investigation began. Most importantly, using the career clusters, students can begin to narrow their focus from a general level to a more specific job title search.

Description of Elements

Each career cluster summary in *ready or not* contains four main elements. “Inside Track” introduces the career cluster and describes the personality types of those who normally fill the jobs associated with the cluster. “Trends” predicts opportunity growth or decline in each cluster so that students may realistically judge the level of competition for jobs and, subsequently, judge the potential market value of those jobs. “Considerations” contains critical information about basic working conditions and ethical concerns associated with employment in the career cluster. To make a responsible career choice, students should be made aware of the personal sacrifice that all work demands. “Discussion Questions” lists a number of thought-provoking questions that encourage students to analyze further, issues that are associated with each career cluster. Teachers may use these questions to help students begin to identify classmates who may share common interests and to help students begin a more in-depth examination of the career cluster at hand. In addition, to encourage students to make the leap from the general career cluster to a specific career, a listing of “Pathways and/or Job Title Samples” has been posted as a sidebar. Teachers should note that a **pathway** is defined as a broad and flexible subdivision of a career cluster that is specific enough to provide real-life occupational context. The information included in the *ready or not* career clusters supplements and supports *r u ready?*.

Procedure

Teachers may give a general overview of each career cluster by using the discussion questions and then divide the class into groups for a deeper study of particular clusters. Supporting information from this section should be duplicated and distributed to students assigned to further investigate the career cluster of choice. The structure for their investigation is contained in the next section, “Traveling the Road” the major culminating activity of this career education unit.

One of the major things of which students should be made aware in their general career cluster investigation is the extent to which similar jobs can be found in more than one cluster. For instance, if a student is interested in biochemistry, he or she might gravitate to career clusters as diverse as Agriculture, Food, and Natural Resources; Health Sciences; Science, Technology, Engineering, and Mathematics; Government and Public Administration; or Education and Training.

Another interesting concept is that of “similar characteristics occupations” wherein a skill set can cross a wide range of careers. This is explored in “Traveling the Road.”

Sources

The information contained in this Career Cluster section was gathered from six major sources.

Occupational Outlook Handbook

from The United States Department of Labor, Bureau of Labor Statistics
<http://www.bls.gov/oco>

O*NET OnLine

<http://online.onetcenter.org>

Overview of Bureau of Labor Statistics by Industry

from The United States Department of Labor, Bureau of Labor Statistics
<http://www.bls.gov/bls/industry.htm>

States' Career Clusters

<http://www.careerclusters.org>

Virginia Employment Commission

<http://www.vec.state.va.us>

Virginia Career VIEW

<http://www.vacareerview.org>

Agriculture, Food, & Natural Resources

Inside Track

The Agriculture, Food, and Natural Resources career cluster attracts people who are hardworking and physical, independent, consistent, resilient, and self-reliant. At its core, this career cluster is focused on managing and predicting patterns in nature. Industries within this cluster include farming, mining, logging, forestry, animal health/science, agriscience, aquaculture, fishing, ecology, conservation, and geology. Instructional programs in agriculture and natural resources deal with the growth and harvest of crops for commercial and scientific purposes, the raising and training of animals, the health of plants and animals, the use of natural resources, the management of agricultural businesses, and the production of agricultural goods. Self-employed workers—mostly farmers—account for more than half of the industry's workforce. Since the 1950s, both agricultural employment and the number of farms have dropped significantly because of mechanization and other technological advancements. Although approximately one-third the number of farms exist today as compared to 50 years ago, output has more than doubled, exports of agricultural goods continue to contribute positively to the trade balance, and agricultural production remains one of the nation's top 10 industries in terms of total employment. The agricultural production industry consists of noncommercial and commercial farms. Commercial farms, though few in number, make up about 90 percent of total agricultural sales. Overall employment of agricultural workers is projected to grow more slowly than the average for all occupations over the 2004–2014 period. An interesting note, according to the *New York Times*, 11/16/2006 "Agricultural Mainstay Gets a New, Urban Face," by Monica Davey, "FFA has grown into the largest annual student gathering in the nation. More FFA members now come from towns, suburbs and city neighborhoods than from rural farm regions... Mainly, the FFA, created to build pride among young farmers-to-be, is drawing students who say they do not in the least wish to become farmers, but rather food industry scientists, seed bioengineers, florists, landscapers and renewable fuels engineers."

Pathways and/or Job Title Samples

Pathway: Agricultural

Management, Production, & Operations

Agricultural Animal Husbandry & Production Manager
Agricultural Business/Agribusinessperson
Agricultural Economist
Agricultural Extension
Agricultural Power Machinery Operator
Aquaculture Operator & Producer
Animal Trainer
Commercial Fisher
Equestrian Equine Studies, Horse Manager & Trainer
Farm & Ranch Manager
Management Crop Production Operator & Manager

Pathway: Agricultural Sciences, Processes, & Support Services

Agricultural Animal Breeding & Geneticist
Agricultural Animal Health Care Provider
Agricultural Animal Nutritionist
Agricultural Animal Physiologist
Agricultural Chemist
Agricultural Plant Pathologist
Agricultural Plant Physiologist
Agricultural & Food Products Processing Operations & Management
Agricultural Supplies, Retailing, & Wholesaling
Agronomist & Crop Scientist
Dairy Scientist
Doctor of Veterinary Medicine (DVM)
Food Scientist & Technician
Horticulture Scientist
International Agriculture
Plant Breeding & Geneticist
Plant Protection (Pest Management)
Poultry Scientist
Range Scientist & Manager
Theriogenologist
Veterinary Anesthesiologist
Veterinarian Assistant
Veterinary Clinical Scientist (MS or Ph.D.)
Veterinary Emergency & Critical Care Medicine
Veterinary Dentist
Veterinary Dermatologist
Veterinary Immunologist
Veterinary Internist (Medicine)

Pathways and/or Job Title Samples

Veterinary Microbiologist
Veterinary Nutritionist
Veterinary Ophthalmologist
Veterinary Pathologist
Veterinary Practitioner
Veterinary Radiologist
Veterinary Surgeon
Veterinary Toxicologist

Pathway: Conservation & Natural Resources

Ecologist
Environmental Scientist
Environmental Studies
Fishing & Fisheries Sciences & Manager
Forest Harvesting & Production
Technician
Forest Products Technician
Forestry Scientist
Hydrology & Water Resources Scientist
Marine/Aquatic Biologist
Marine Resources Manager
Natural Resources Manager &
Policymaker

Pathway: Horticulture, Landscaping, & Groundskeeping

Floristry Marketing Operator
Greenhouse Operator & Manager
Landscaping Operator & Manager
Nursery Operations & Manager
Ornamental Horticulture Operator &
Management
Turf Manager

Pathway: Mining & Quarrying

Air Hammer Operator
Blaster & Explosives Technician
Geologist
Miner
Mining & Geological Engineers,
including Mining Safety Engineers
Surveyor

Trends

Employment in the agriculture, forestry, and fishing industry is projected to decline 11 percent over the 2004–2014 period. The end of the 20th century witnessed the near disappearance of the family farm and the emergence of the commercial farm. Farm workers will increasingly work for farm labor contractors rather than being hired directly by the farm. Continued consolidation of farms and advancements in farm equipment will dampen employment growth over the 2004–2014 period. The agriculture industry also is expected to face increased competition from foreign countries and rising imports, particularly from Central America, owing to the passing of a free trade agreement with that region. While the demand for natural resources such as coal and oil continues to rise, so has the need to develop better technologies to locate and drill for new energy sources. There is also a need to develop alternative forms of fuel and greater conservation methods. Fishers face growing restrictions on where they can fish and how much they can harvest, because many fisheries (fish habitats) have been depleted due to years of overfishing. Employment in aquaculture has been growing steadily over the past 12 years in response to growth in the demand for fish. However, competition from imported fish and an unsettled regulatory environment that is placing restrictions on some fish farms may slow the growth of this sector of agriculture. Employment in forestry is also expected to decline as the sector moves toward greater mechanization, replacing many lower skilled workers with more machinery tended by a few operators. In addition, imports of wood and wood products are expected to continue to grow. As for employment declines, they are being moderated by other changes taking place in agriculture. New developments in the marketing of milk and other agricultural produce through farmer-owned and operated cooperatives hold promise for some dairy and other farms. Furthermore, demand is growing for organic farm produce—grown to a large extent on small to medium-sized farms. The production of crops without the use of pesticides and certain chemicals is allowing farms of small acreage to remain economically viable—which only 12 years ago appeared to have almost no future as working farms. Nursery and greenhouse workers should have the most rapid job growth, reflecting the increasing demand for landscaping services. Niche farming, defined as a small segment of a market that is targeted by those individuals who have a specialized product to sell, is another way to profit. Creative, entrepreneurial undertakings, such as setting up small shops with homemade farm products, demonstrations, and hay rides during pumpkin season can boost farm income as well.

Considerations

- Agricultural and mining work is extremely demanding and labor intensive.
- Workers are often expected to perform their duties without close supervision in rural and remote areas. If contact with other people is not a passion, but the worker enjoys the company of animals/nature, farm life might be a good fit.
- Beware, a fondness for animals will only take the worker so far. There is great skill in understanding how to treat and relate to animals in an effective and safe manner.
- Genetic manipulation and hormonal alteration have increased production dramatically, but questions remain about the potential residual effects and implications these drugs and procedures may have over long-term use.
- Coupled with pesticides, erosion, nitrogen depletion, flood plain expansion, unpredictable weather events, and pollution and waste issues, agricultural production is a serious endeavor that demands a great deal of planning and discipline.
- In the natural resources area, one must consider the ethical and economic ramifications of steadily depleting resources. Nowhere is this more apparent today than with deforestation and the gradual disappearance of federally protected lands. Finding workable solutions to all these problems is one of the most challenging agricultural/scientific occupational areas.

Discussion Questions

Approximately one-third the number of farms exist today as compared to 50 years ago; however, output has more than doubled and agricultural production remains one of the United States' top 10 industries in terms of total employment. How is this possible?

Why are hourly wages often deceptive when considering a job in the agricultural field?

What are some of the pros and cons of working conditions in the Agriculture, Food, and Natural Resources career cluster?

What may the future hold in store for the Agriculture, Food, and Natural Resources industries?

What is the status of small, independent, local farmers, including organic and specialty farmers?

Architecture & Construction

Inside Track

Many of those attracted to careers in Architecture and Construction are naturally disposed to structured thinking and are focused on building. They enjoy seeing their plans, work, and materials successfully come together. In its essence, construction is a reaction to fulfilling a basic individual need for shelter and an ever-increasing social need for infrastructure. Form and function come together to tailor structures and accessories with design elements to suit their inhabitants or users. Houses, apartments, factories, offices, schools, roads, and bridges are only some of the products of the construction industry. This industry's activities include work on new structures, as well as additions, alterations, and repairs. Architects may be involved in every phase of construction, but primarily their skill involves vision and design.

Trends

Employment in wage and salary jobs in the U.S. construction industry is expected to grow about as fast as the average for all occupations through the year 2014. Employment is expected to grow faster in nonresidential construction over the decade. Employment in heavy and civil engineering construction is projected to increase due to growth in new highway, bridge, and street construction. Although employment in construction trades as a whole is expected to grow about as fast as the industry average, the rate of growth will vary by trade. Employment of tile and marble setters; construction and building inspectors; and heating, air-conditioning, and refrigeration mechanics and installers is projected to grow faster than the industry average because their specialized services will be in greater demand. On the other hand, employment of carpet installers; construction laborers; floor sanders and finishers; insulation workers; paperhangers; plasters and stucco masons; and tapers are expected to grow more slowly than that of the construction industry as a whole because either their specialty is not in great demand or they are becoming more productive. Employment of architects is expected to grow about as fast the average for all occupations through 2014. Prospective architects may face competition for entry-level spots, especially if the number of architectural degrees awarded remains at current levels or increases. Prospective architects who gain career-related experience in an architectural firm while they are still in school and who know CADD technology will have a distinct advantage.

Pathways and/or Job Title Samples

Pathway: Architecture & Construction Design

Architecture & Construction Design
Architectural Engineering Technology/
Technician
Architectural Environmental Design
Architectural Urban Design & Planning
Civil Engineering Technology/Technician
Construction/Building Technology/
Technician
Interior Architecture
Landscape Architecture
Surveying & Mapping

Pathway: Residential & Commercial Construction

Carpenter
Concrete Placing & Finishing
Drywall Installer/Drywaller
Electrician
Glazier
Mason & Tile Setter
Painter & Wall Coverer
Plumber & Pipefitter
Roofer

Pathway: Residential & Commercial Installation & Services, Precision Production, Craft, & Repair

Blue Collar Worker Supervisors
Bricklayers & Stone Masons
Carpenters
Construction Equipment Operators
Construction Managers
Cement Masons, Concrete Finishers, &
Terrazzo Workers
Drywall Installers & Finishers
Electricians
General Managers & Top Executives
Heating, Air Conditioning, &
Refrigeration Mechanics and Installers
Helpers, Laborers, &
Material Movers, Hand
Excavation & Loading Machine
Operators
Insulation Workers
Laborers, Landscaping &
Groundskeeping
Machinery Mechanics, Installers, &
Repairers
Officers, Managers, & Administrators
Operators, Fabricators, & Laborers,
Helpers, Construction Trades
Painters & Paperhangers

Pathways and/or Job Title Samples

Insulation Workers
Laborers, Landscaping, &
Groundskeeping
Machinery Mechanics, Installers, &
Repairers
Officers, Managers, & Administrators
Operators, Fabricators, & Laborers,
Helpers, Construction Trades
Painters & Paperhangers
Plumbers, Pipefitters, & Steamfitters
General Managers & Top Executives
Construction Managers

Pathway: Boatbuilders and Shipwrights
Ship Carpenters and Joiners

Employment in construction and architecture is largely dependent on the demand for housing. Demand for residential construction is expected to grow. The number of retired and/or elderly people is growing, and the baby boomers are adding their numbers to a senior population.

The success of the construction industry is tied to the overall health of the economy; therefore, it is affected by changes in interest rates, inflation, price of commodities and transportation, and the strength of the dollar. In recent years, there is a move by some architectural firms to outsource overseas the drafting of construction documents. This trend will likely continue and may have a negative impact on employment growth for lower level architects and interns who gain experience by producing these drawings. However, the majority of firms will keep design services in-house. Architects who distinguish themselves from others with their creativity will have the best opportunities. An example of one field that is opening up is “green design.” Excellent employment opportunities for construction managers are expected through 2014 because there will be more job openings than there will be qualified individuals entering the occupation. This situation is not expected to improve even as college construction management programs expand to meet the current high demand for graduates. The construction industry often does not appeal to qualified job seekers because it tends to be seen as having poor and stressful working conditions.

Considerations

Workers in the architectural and construction industry may face the following considerations:

- Working to meet a deadline often involves long hours at the job.
- Because the construction trades are project oriented, workers sometimes suffer layoffs when work is slow.
- Construction work is labor intensive and involves exposure to the elements/weather. Great physical stamina and well-being are necessary to work at heights or cramped quarters.
- The integrity of the worker to maintain high working standards is crucial. Deadlines, variable prices for materials, and overall costs can make it tempting to cut corners and sacrifice quality work.

- Safety issues, both to the worker on the job and to the inhabitants or users of the finished product, is always a significant concern.
- Architects try to solve problems before they happen. They have to know when to uphold their design features and yet remain willing to compromise their vision if the project demands it.

Discussion Questions

Why do construction workers and architects bear such a great responsibility to the quality of their work?

How will an aging population affect the construction trade?

What are some of the most interesting architectural structures in this region?

If you could build any structure, large or small, what would it be?

Why are there layoffs in construction?

Why do you need leadership skills to be an effective architect?

Why is the construction industry one of the yardsticks of the economy?

What is the impact of environmentally-friendly, “green” construction?

What are the possibilities for up-and-coming architects and builders in “green” construction?

Arts, A/V Technology, & Communications

Inside Track

The Arts, A/V Technology, and Communications career cluster attracts people who are self-expressive and creative, use inductive reasoning to compare experience and bits of related information, and are good organizers. The chief concerns of this cluster are expression and interpretation. The services deal with designing, producing, exhibiting, performing, writing, broadcasting, and publishing multimedia content, which includes visual, performing arts and design, journalism, and entertainment services.

Trends

Without telecommunications and its high-powered infrastructure, there would be no Information Age. The effects of technology on business and industry have been remarkable, but who could have guessed the enormous influence communications has had on our private lives and on the collective culture? Rapid growth in communications has been pushed forward by new technologies and changing government regulations and has created a truly worldwide marketplace. It has never been easier, quicker, or cheaper to communicate with others at vast distances. Employment in the telecommunications industry nationwide is expected to grow about as fast as the average through the year 2014. In the marketplace, media ownership is consolidating. Corporate buy-outs and sell-offs make for a tumultuous career path for individual workers. It also means workers must be able to adapt to sudden changes in the industry and diversify their job skills. Savage competition among major players has already resulted in a small but ultra-powerful oligarchy of media giants. As for the softer arts, there has always been a cultural need and demand for artwork to represent the world and our place within it. But is there a market? As information floods our senses at unprecedented rates, it has never been easier to bring self-expression to the masses. Because markets are becoming more image-driven and image-conscious, the need for messages to stand out and be noticed is more important than ever. Therefore, many of the same talents we formerly associated exclusively with the arts are in demand by organizations, government, and industries alike. While the demand for jobs in this cluster may be steady, competition is keen, and many individuals find it difficult to earn a living solely in these areas. There are two examples of

Pathways and/or Job Title Samples

Pathway: Audio & Video Technologies

Animation, Video, Graphics, & Special Effects
Recording Arts Technology/Technician

Pathway: Commercial & Graphic Design

Commercial Photography
Design & Visual Communications
Graphic Design, Commercial Art, & Illustration
Industrial Design
Photographic Technology/Technician
Medical Illustrating

Pathway: Crafts & Fine Arts

Drawing
Photography

Pathway: Journalism, Writing, and Broadcasting

Journalism
Broadcast Journalism
Digital Communications & Media Journalism
Mass Communications
Radio & Television Broadcasting
Radio & Television Broadcasting Technology/Technician

Job Titles

Actors
Art Directors
Audio & Video Equipment Technicians
Broadcast News Analysts
Broadcast Technicians
Camera Operators, Television, Video, & Motion Picture
Choreographers
Coaches and Scouts
Commercial & Industrial Designers
Craft Artists
Dancers
Editors
Fashion Designers
Film & Video Editors
Film Laboratory Technicians
Fine Artists, Including Painters, Sculptors, & Illustrators
Floral Designers
Graphic Designers
Interior Designers
Interpreters & Translators

Pathways and/or Job Title Samples

Merchandise Displayers &
Window Trimmers
Multimedia Artists &
Animators
Music Directors & Composers
Musicians & Singers
Photographers
Producers & Directors
Public Address System & Other
Announcers
Public Relations Specialists
Radio Operators
Radio & Television
Announcers
Reporters & Correspondents
Set & Exhibit Designers
Sound Engineering Technicians
Sports Commentators
Technical Writers
Telecommunications Equipment
Installers & Repairers,
except Line Installers
Telecommunications Facility
Examiners
Telecommunications Line
Installers & Repairer
Writers & Authors

pathways that are growing faster than others. Graphic designers are tapping into the expanding markets for the Internet, video, television, and movies. And online publications and services are growing in number and sophistication, spurring the demand for writers and editors. Additionally, computer and Internet services will provide new outlets for interactive productions. However, growth will be slowed by the increasing off-shore production of motion pictures. Camera operators will be needed to film made-for-the-Internet broadcasts, such as live music videos, digital movies, sports features, and general information or entertainment programming. These images can be delivered directly into the home either on compact discs or as streaming video over the Internet.

Considerations

- One of the biggest issues in the media is the rise in voyeuristic programming and reporting.
- Since information is more accessible and transmittable than ever, this raises important right-to-privacy issues.
- The media is heavily regulated by governing bodies, yet censorship issues still abound as the media consistently challenges legislation prohibiting free transmittal of content and messages.
- Artists who are dedicated and lucky enough to make a living from their expression also commonly generate alternate sources of income.

Discussion Questions

How connected is “too connected”? What is the downside to the Information Age?

Where do you seek local and national news? Why?

What categories of news most appeal to you? Why?

What forms of media-generated entertainment do you enjoy? Why?

What are some art issues recently in the news?

Business, Management, & Administration

Pathways and/or Job Title Samples

Inside Track

The Business, Management, and Administration career cluster attracts those who are effective planners, communicators, leaders, task- and detail-oriented, well-organized, and efficient. Those involved in business and administration are concerned with the successful coordination and efficient management of resources and are often driven to enhance the profitability of their enterprise or organization. Administrators and managers deal with planning, managing, and providing administrative support, information processing, accounting and human resource management services, and related business management support services. Independent management and public relations firms also influence how businesses, governments, and institutions make decisions.

Trends

Employment of administrative service managers is projected to grow as fast as the average for all occupations through 2014, while advertising, marketing, promotions, public relations, and sales managers are expected to grow faster than average through 2014, spurred by intense domestic and global competition. Employment of management analysts are expected to grow faster than the average for all occupations through 2014, as industry and government increasingly rely on outside expertise to improve the performance of their organizations. Job growth is projected in very large consulting firms with international expertise and in smaller consulting firms that specialize in specific areas such as biotechnology, health care, information technology, human resources, engineering, and marketing. Growth in the number of individual practitioners may be hindered by increasing use of consulting teams. Wage and salary jobs in the management and public relations services industry nationwide are expected to grow by 45 percent—triple the 15 percent growth projected for all industries combined, ranking it among the most rapidly growing industries. Projected job growth can be primarily attributed to the increasing complexity of business. As business continues to tackle new technologies, especially in information technology and telecommunications, it needs to learn how to make things work more efficiently. The traditional business structure changes as social values change. For instance, gender and minority equality as an idea, a reality, and a legality has made significant impact on

Pathway: Administrative Support Services

Court Reporter
Desktop Publishing & Web Page
Design Specialist
Executive Assistant/Secretary
General Office/Clerical & Typing
Services
Information Processing/Data Entry
Technician
Legal Administrative Assistant/Secretary
Medical Administrative Assistant/
Secretary
Medical Office Management
Medical Records Administration
Medical Records Technology/
Technician
Medical Transcription
Receptionist & Call Center/
Teleservice Operation

Pathway: Business Management Entrepreneurship

Business/Managerial Economics
Business Statistics
Franchise Operation
Human Resource Management
International Business
Labor/Personnel Relations & Studies
Management Science
Office Supervision & Management
Organizational Behavior Studies
Purchasing, Procurement, & Contracts
Management

Job Titles

Administrative Services & Facility
Managers
Advertising, Marketing, & Public
Relations Managers
Agents & Business Managers of Artists,
Performers, and Athletes
Appraisers and Assessors of Real Estate
Compensation, Benefits, & Job Analysis
Specialists
Compliance Officers, except
Agriculture, Construction, Health &
Safety, & Transportation
Construction Managers
Designers
Education Administrators
Emergency Management Specialists
Employment Interviewers, Recruitment,
& Placement Specialists

Pathways and/or Job Title Samples

Financial Managers
General Managers & Top Executives
Logisticians
Management Analysts
Meeting & Convention Planners
Public Relations Specialists
Training & Development Specialists

the workplace. The new diverse look of management around the country demands new methods for encouraging positive cross-cultural and intergender relationships.

Considerations

- The Calvin Coolidge tenet from 1925, “The business of America is business,” still holds true today. Being an effective businessperson means looking out for yourself as well as the office, industry, or shareholders you represent. You must also be attentive to the bottom line on the balance sheet.
- Businesses are as diverse as people, so it pays to be aware of the type of business you want to work for before you become involved with it. While people may be working as a team, they are nonetheless often in direct competition with each other for advancement.
- Reputation carries weight in the business world, but so does success that can be assessed.
- Some additional pressing issues in the workplace are
 - * the negative effects of competition
 - * the welfare of the business/organization vs. the welfare of the individual
 - * hiring and firing practices
 - * effects of programs such as Affirmative Action
 - * job-related stress
 - * the reward for company loyalty.

Discussion Questions

What is bureaucracy, and how does the term apply to business/administration?

What are some possible reasons for layoffs?

*What is the most difficult aspect about working with others?
The most enjoyable?*

Can you name some businesses and institutions you think are poorly run and some that are well run?

What are your criteria for a well-run business?

What are the risks to the individual of focusing primarily on company loyalty?

Education & Training

Inside Track

Those interested in pursuing occupations in the Education and Training career cluster are commonly attracted to playing a role in the intellectual development of others and/or passing on the tools of a trade. Individuals in this cluster deal with planning, administering, managing, and providing education and training services. Related learning support services include library, information services, child care, and counseling services, and also preparatory medical training in educational settings.

Trends

Job opportunities for teachers over the next 10 years will vary from good to excellent, depending on the locality, grade level, and subject taught. The number of individuals competing for kindergarten, elementary, and secondary school teaching positions also may increase in response to alternate certification programs, increased salaries, and greater teacher involvement in school policies and programs. Employers are emphasizing improved career and technical education and creating programs that will better prepare graduating students to make successful transitions into the workforce. The number of special education teachers is expected to grow the fastest of any job segment in the career cluster, spurred by growing enrollment of special education students, increased emphasis on inclusion of disabled students into general education classrooms, and the effort to reach students with impairments at a young age. Qualified teachers in mathematics, science (especially chemistry and physics), bilingual education, and foreign languages are in demand in many school districts. At the college level, competition for teaching jobs is expected to remain fierce and the demand relatively constant.

Considerations

- Including duties outside the classroom, most teachers work more than 40 hours a week.
- Coping with student behavior and violence in the schools has recently become a central issue in most communities.
- The student population continues to diversify in learning styles, personal background, ethnicity, income level, and intellectual ability.

Pathways and/or Job Title Samples

Pathway: Child Care

Child Care Provider/Assistant (Nanny)
Child Care Services Manager
Child Growth, Care, & Development
Studies
Human Development/Child
Development, Care, & Guidance

Pathway: Pre-Professional Medical Studies

Pre-Dentistry Studies
Pre-Medicine Studies
Pre-Pharmacy Studies
Pre-Nursing Studies
Pre-Veterinary Studies

Pathway: Teaching/Training

Adult Literacy, Remedial Education, &
GED Teachers, & Instructors
Agricultural Sciences Teachers
Agricultural Teacher Education
Anthropology & Archeology Teachers
Architecture Teachers
Archivists
Area, Ethnic, & Cultural Studies
Art, Drama, & Music Teachers
Atmospheric, Earth, Marine, & Space
Sciences Teachers
Audio-Visual Collections Specialists
Biological Science Teachers
Business Teachers
Business Teacher Education
(Vocational)
Chemistry Teachers
Communications Teachers
Computer Science Teachers
Criminal Justice & Law Enforcement
Teachers
Curators
Economics Teachers
Education Administrators
Education Teachers
Education, Training, & Library
Workers, All Other
Elementary School Teachers
Elementary Teacher Education
Engineering Teachers
English Language & Literature
Teachers
Environmental Science Teachers
Family & Consumer Sciences Teachers
Farm and Home Management Advisors
Foreign Language & Literature
Teachers
Forestry & Conservation Science

Pathways and/or Job Title Samples

Geography Teachers
Graduate Teaching Assistants
Health Occupations Teacher Education
Health Specialties Teachers
History Teachers
Home Economics Teachers
Instructional Coordinators
Kindergarten Teachers, except Special
Education
Law Teachers
Librarians
Library Science Teachers
Library Assistants & Bookmobile
Drivers
Library Technicians
Marketing & Distribution Teachers
Mathematical Science Teachers
Middle School Teachers, except Special
& Vocational Education
Museum Technicians & Conservators
Nursing Instructors & Teachers
Philosophy & Religion Teachers
Physics Teachers
Political Science Teachers
Pre-Elementary/Early Childhood/
Kindergarten Teachers
Preschool Teachers, except Special
Education
Psychology Teachers
Recreation & Fitness Studies Teachers
Secondary School Teachers
Self-Enrichment Education Teachers
Social Work Teachers
Sociology Teachers
Special Education Teachers, Middle
School
Special Education Teachers, Preschool,
Kindergarten, & Elementary School
Teacher Assistants
Teacher Assistant/Aide
Technology Teacher Education
Trade & Industrial Teacher Education
(Vocational)

- Teachers have to follow strict state licensure requirements and maintain certification.
- Education is inexorably tied to its funding, and funding, for the most part, comes from government. Therefore, government decisions and legislation play a central role in determining the future of education.

Discussion Questions

The teacher can become the resource for this career cluster. Put your own decision to pursue a career in education at the center of your students' discussion. Talk about the following:

- *When did your interest in education begin to grow?*
- *How did you get started?*
- *What kind of training and schooling did you need?*
- *What are your biggest concerns with education?*

Finance

Inside Track

Occupations in the Finance career cluster are bound by the desire for wealth and asset management and are ultimately focused on providing security and financial growth for clients. Whether through banking, investing, financial planning, studying the economy, or providing a bevy of insurance-related services to firms, businesses, and individuals, the finance cluster generally attracts workers who are interested in math and have strong deductive reasoning skills. Careers in this cluster demand that workers have personal integrity and self-reliance.

Trends

Overall employment of financial analysts and personal financial advisors is expected to increase faster than average for all occupations through 2014. Deregulation of the financial services industry is expected to spur demand for financial analysts and personal financial advisors. In recent years, banks, insurance companies, and brokerage firms have been allowed to broaden their financial services. Perhaps the largest determining factors in the banking, insurance, and securities and investment industries are the values and demographics of those who purchase these financial services, and the relative health and/or potential of financial institutions in the United States. Through the next decade, baby boomers will dominate the demand curve. They are reaching their years for peak savings, and financial legislation is favoring their needs. Fluctuations in the stock market do not deter the need for financial services. On the contrary, investors increasingly diversify portfolios and investment strategies to protect what they have accumulated. While some services have become increasingly automated (thereby eliminating jobs), services themselves have become increasingly complex (thereby creating demand). Baby boomers are expected to seek out professional investment, retirement, and savings advice. Market globalization also will keep finance as one of the most promising fields to pursue. New markets, such as China and nations from the former Soviet Union, continue to open and expand, creating more possibilities for growth. Meanwhile, although employment in banking is expected to grow only minimally in the next 10 years, more will be expected of each worker as financial institutions turn into “one-stop-shops” for financial services.

Pathways and/or Job Title Samples

Pathway: Banking & Finance

Banking & Financial Support Services
International Finance

Pathway: Financial Planning

Financial Planning
Insurance & Risk Management
Investments & Securities
Taxation

Pathway: Insurance Services

Actuarial Science
Insurance Marketing Operations

Job Titles

Accountants & Auditors
Adjusters, Investigators, & Collectors
Agents & Business Managers of
Artists, Performers, & Athletes
Appraisers & Assessors of Real Estate
Bank Tellers
Bookkeeping, Accounting, &
Auditing Clerks
Budget Analysts
Claims Adjusters, Examiners, &
Investigators
Compensation, Benefits, & Job
Analysis Specialists
Compliance Officers, except
Agriculture, Construction, Health &
Safety, & Transportation
Computer Engineers & Scientists
Computer Systems Analysts
Cost Estimators
Credit Analysts
Credit & Loan Authorizers, Checkers,
& Clerks
Emergency Management Specialists
Employment, Recruitment, &
Placement Specialists
Financial Analysts
Financial Examiners
Financial Managers
Insurance Appraisers for Auto Damage
Insurance Underwriters
Loan Counselors
Loan Officers
Logisticians
Management Analysts
Meeting & Convention Planners
New Accounts Clerks
Personal Financial Advisors
Purchasing Agents & Buyers, Farm
Products
Purchasing Agents

Pathways and/or Job Title Samples

Securities, Commodities, & Financial
Services Sales Representatives
Tax Examiners, Collectors, &
Revenue Agents
Tax Preparers
Training & Development Specialists
Wholesale & Retail Buyers

Considerations

- Working in the financial field is dependent chiefly on one's ability to offer good, time-tested advice and to build and maintain relationships with clients. Handling someone else's money demands respect, honesty, empathy, precision, objectivity, and care. Failure to detect a client's expectations or neglecting a client's needs altogether is unprofessional behavior.
- One's ability to communicate clearly is paramount.
- Like many fields where workers are somewhat independent (with the exception of support staff), experience and reputation can build a career.
- Many in the financial services trades work longer than the 40-hour week and are exceptionally driven and competitive. They are often people who are attracted to the accumulation and development of wealth just like their clients.
- Bankers must build positive reputations in the community as well.
- Layoffs in the financial world directly correspond to the health and potential health of the economy. In fact, one of the telltale market indicators is the rate of employment in the financial sector, especially in brokerage houses.
- Members of the financial workforce are often forced to go through long periods of income boom and bust, especially those who work on commission.

Discussion Questions

Do you read the financial sections of the newspaper or listen to market reports on television or the radio? Why, or why not?
Do you know what a ticker is? NASDAQ? Dow Jones?
What are the biggest financial markets in the United States?
What is the Federal Reserve Bank? What does it do that banks in the private sector do not do?
How do interest rates affect spending/saving?
Can you name some financial services you currently use?
Credit cards? Checking/Savings accounts? Online investing? Car insurance?
Do you file a tax return?

Government & Public Administration

Pathways and/or Job Title Samples

Inside Track

Those seeking occupations in the Government and Public Administration career cluster are effective at conceiving ideas, planning projects, and issuing and/or putting directives into action. They are especially adept at using inductive reasoning to handle problems on their way to finding appropriate solutions. Some of these workers are skilled bureaucrats who usually rely on their communication skills to foster dynamic interpersonal and professional relationships. Occupations in government and public administration deal with planning, managing, and providing government, legislative, administrative, and regulatory services; these include government services at the federal, state, and local levels, such as public finance and planning. State government has a larger percentage of executive and professional specialty occupations, while local government employs a higher share of service and production workers.

Trends

State and local government employment is projected to increase about 10 percent during the 2004–2014 period. Employment growth will be somewhat dampened by budgetary constraints due to reductions in federal aid, especially at the national level, and to citizen resistance to tax increases. Rapid increases in demand for some services—such as those for the elderly, mentally impaired, and children—will grow faster than other private social and human services. In general, federal employment is considered to be relatively stable because it is not affected by cyclical fluctuations in the economy. For the most part, areas of employment in the governmental sector offer lower pay than their counterparts in the private sector. However, benefits may be more dependable. Federal employment is affected by political agendas and national concerns (e.g., Homeland Security). The distribution of federal employment will continue to shift toward a higher proportion of professional, technical, and managerial workers. As the relationship between levels of government continues to change in the coming decade, so will the nature of services provided by state and local governments.

Pathway: Governmental Relations International Relations & Affairs

Pathway: Public Administration Public Administration Public Policy Analysis

Pathway: Public Finance & Planning City/Urban, Community, & Regional Planning Non-Profit & Public Management Public Finance

Sample Levels & Departments within Governments: Federal

Congress
House of Representatives
Senate
Department of Defense
Air Force
Army
Coast Guard
Marines
Navy
U.S. Customs
U.S. Marshals
Consumer Product Safety Commission
Department of Agriculture
Department of Commerce
Department of Homeland Security
Immigration & Naturalization Services
Department of Justice
Court of Appeals
Supreme Court
Department of the Interior
Department of Transportation
Department of the Treasury
Federal Reserve Banks
Internal Revenue Service
Department of Veterans Affairs
Selective Service System
Environmental Protection Agency
Equal Employment Opportunity Commission
Federal Transit Administration
Food & Drug Administration
Health & Human Services
Center for Disease Control & Prevention
Medicare
Natural Resources & Conservation
Housing & Urban Development
Social Security Administration
U.S. Postal Service

Pathways and/or Job Title Samples

Virginia

Offices of the Attorney General (Courts)
Commission for the Arts
Alcoholic Beverage Control Department
Board of Medicine
Charitable Gaming Commission
Chesapeake Bay Commission
Child Abuse & Neglect
Civil Defense
Community College System
Conservation & Recreation
Crime Commission
Department of Correctional Education
Department of Corrections
Department of Education
Department of Motor Vehicles
Department of Labor & Industry
Department of Taxation
Department of Transportation
Employment Commission
Forestry Department
Game & Inland Fisheries Department
Highway Patrol
Juvenile Justice
Library of Virginia
Mental Health
Housing & Community Development
National Guard
Social Services
State Bar
State Police

Local

Department of Recreation
Fire Protection
Highways and Streets
Jails
Libraries
Permits
Planning
Police
Public Works
Social Services
Water & Sewer (Utilities)

Considerations

- Almost half of federal workers hold managerial or professional jobs, a rate twice as high as the workforce as a whole. About 80 percent of federal employees work outside the Washington, D.C., metropolitan area. Of the three branches of government (legislative, judicial, and executive), the executive branch has the widest range of responsibilities and employed about 98 percent of all federal civilian employees (excluding postal workers) in 1998.
- The executive branch is composed of the Executive Office of the President, 14 executive cabinet departments, and more than 90 independent agencies. Each of the 14 executive cabinet departments (e.g., Defense, Treasury, State, and Labor) administers programs that oversee an element of American life.
- Some smaller, but well-known “independent” agencies include the National Aeronautics and Space Administration (NASA), the Environmental Protection Agency (EPA), and the Peace Corps.
- Excluding the education and hospital sectors, state and local governments employ about 7.2 million workers, placing them among the largest employers in the economy. In addition to the 50 state governments, there are about 87,000 local governments, according to the Bureau of the Census.
- States receive considerable leeway to devise welfare programs that meet their needs as a result of the 1996 Congressional reform act that provided block grants to states.

Discussion Questions

What are some well-known government agencies, independent or otherwise?

What are some pros and cons to working for the government (federal or state)?

So many of these job titles in Government and Public Administration can be found in other career clusters. Why do you think government has its own career cluster?

With whom and for what do government programs compete?

How do you define administration?

How can new political administrations affect government workers?

Health Sciences

Inside Track

The Health Sciences career cluster is big and getting bigger. Still, everyone from the orderly to the neurosurgeon has at least one thing in common: they provide comfort, care, and repair to human beings. Those working in this field perform their jobs endlessly, often behind the scenes. The skill to facilitate human relationships, a precise use of communication skills, and interpretive analysis are crucial tools in the practice of any health occupation. New advances in science are paving the way for medical breakthroughs and cures. Therefore, those involved in health services must keep abreast of improvements in their industry. Obviously, since health is perhaps one's most valued asset, one hopes to entrust it only to the most capable individuals. Nearly half a million establishments make up the health services industry, and all vary greatly in terms of size, staffing, and organization. Two-thirds of all private health services establishments are offices of physicians or dentists. Health care is made up of medical hospitals, mental health facilities, home health care, private offices and clinics, health and allied services, medical and dental laboratories, online medical Web sites (both reputable and otherwise), and other segments like alternative medicine practitioners.

Trends

Many of the occupations projected to grow the fastest in the economy are concentrated in the health services industry. Employment of physicians assistants (PA) is expected to grow much faster than average for all occupations through the year 2014, ranking among the fastest growing occupations, due to anticipated expansion of the health care industry and an emphasis on cost containment, resulting in increasing use of PAs by physicians and health care institutions. Job opportunities for RNs in all specialties are expected to be excellent. Employment of registered nurses is expected to grow much faster than average for all occupations through 2014, and, because the occupation is very large, many new jobs will result. In fact, registered nurses are projected to create the second largest number of new jobs among all occupations. Employment of physical therapist assistants and aides is expected to grow much faster than the average for all occupations through the year 2014. Physical therapists are expected to use assistants increasingly to reduce the cost

Pathways and/or Job Title Samples

Pathway: Diagnostic & Treatment Technologies

Cardiovascular Technology/Technician
Electrocardiograph Technology/
Technician
Occupational Therapy Assistant
Physical Therapy Assistant

Pathway: Health & Medical Care Services

Dental Laboratory Technician
Health Unit Coordinator/Ward Clerk
Health Unit Manager/Ward Supervisor
Nurse Assistant/Aide
Nursing, Surgical (Post-RN)
Practical Nurse (LPN Training)

Pathway: Health Treatment Specialties

Dental Assistant
Emergency Medical Technology/
Technician
Home Health Aide
Institutional Health Aide
Laboratory Animal Medicine
Medical Assistant
Personal Care Attendant
Sports Medicine Residency
Surgical/Operating Room Technician
Zoological Medicine

Pathway: Mental Health Services

Psychiatric/Mental Health Services
Technician

Job Titles

Anesthesiologists
Athletic Trainers
Audiologists
Cardiovascular Technologists &
Technicians
Chiropractors
Dental Hygienists
Dentists, General
Diagnostic Medical Sonographers
Dietetic Technicians
Dietitians and Nutritionists
Emergency Medical Technicians &
Paramedics
Family & General Practitioners
Internists, General
Home Health Aides
Licensed Practical & Licensed
Vocational Nurses
Massage Therapists
Medical Assistants

Pathways and/or Job Title Samples

Medical Records & Health
Information Technicians
Medical & Clinical Laboratory
Technicians
Medical & Clinical Laboratory
Technologists
Medical Equipment Preparers
Medical Transcriptionists
Nuclear Medicine Technologists
Nursing Aides, Orderlies, &
Attendants
Obstetricians & Gynecologists
Occupational Health & Safety
Specialists
Occupational Health & Safety
Technicians
Occupational Therapists
Opticians, Dispensing
Optometrists
Oral & Maxillofacial Surgeons
Orthodontists
Orthotists & Prosthetists
Pediatricians, General
Pharmacists
Pharmacy Technicians
Physical Therapists
Physician Assistants
Podiatrists
Prosthodontists
Psychiatric Technicians
Psychiatrists
Radiation Therapists
Radiologic Technologists
Recreational Therapists
Registered Nurses
Respiratory Therapists
Respiratory Therapy Technicians
Speech-Language Pathologists
Surgeons
Surgical Technologists

of physical therapy services. The fastest growth is expected for workers in occupations concentrated outside the hospital sector. Occupations with relatively few replacement openings, on the other hand, are those with high pay and status, lengthy training requirements, and a high proportion of full-time workers, such as physicians. For some executive, administrative, and managerial occupations, rapid growth will be countered by restructuring to reduce administrative costs and streamline operations. Rapid growth in other health services segments will mainly result from the aging population, new medical technologies, and the subsequent increase in demand for all types of health services. While new technologies are lowering the cost of treatment and diagnosis, they also enable identification and treatment of conditions not previously treatable. Although workers at all levels of education and training will continue to be in demand, job seekers with health-specific training will find it easier to obtain jobs and advance.

Considerations

- Health Sciences is strong among the career clusters that rely on developing client/worker relationships. Often practitioners must apply their perceptive abilities to translate what the consumer wants and needs.
- Health care workers involved in direct patient care must take precautions to guard against back strain from lifting patients and equipment, exposure to radiation and caustic chemicals, and infectious diseases such as AIDS, tuberculosis, and hepatitis.
- Home care personnel who make house calls are exposed to the possibility of being injured in highway accidents, overexertion when assisting patients, and falls inside and outside of homes.
- Health care is also extremely sensitive to money/funding issues as many of the services are paid for through reimbursement. Financial accountability is key when dealing with government and insurance agencies.

Discussion Questions

What is a national health care system, and how would it change the current health care system in the U.S.?

Why might it be an advantage to be bilingual in a health care profession?

What is malpractice? Health care insurance? Medicaid?

An HMO?

How much education does one need to become a heart surgeon/cardiologist?

Why is there a rising need for home health care providers?

Hospitality & Tourism

Inside Track

Chiefly a service-oriented career cluster, Hospitality and Tourism concerns itself with providing lodging, food, recreation, convention services, tourism, and travel as well as related planning and support services. Those interested in pursuing such careers are often extremely intuitive if not empathic about the expectations of consumers. Workers in this cluster take distinct pleasure in providing unique, individualized service. Those who provide optimum service are seen as assets, because they can make or break the reputation of an entire establishment. Therefore, employees must have integrity, for they embody the vision of their employers and reflect the quality of their location. Even those who work behind the scenes are noticed, especially when service falls off and consumers become disappointed. Employees of large resorts and hotels must be able to work as an orchestrated team.

Trends

In recreation services, nationwide overall employment is expected to grow about as fast as the average for all occupations through 2014. Job opportunities in the food and beverage services should be plentiful for young and part-time employees. This industry is often considered attractive to individuals who want to own and run their own businesses. The amusement side will reap the benefits of consumers' larger incomes, recreational time, increased awareness in the benefits of participating in leisure activities, and rising foreign tourism in the United States. Changing demographics of the nation increasingly target the growing elderly population. Therefore, employment opportunities associated with cruise ships and golf courses will increase. In addition, we should expect continued growth of fitness centers for the older consumer as well as for the health-conscious younger consumer. Growth in income is directly associated with spending for leisure activities.

Considerations

- Amusement is steered by social trends and values. Therefore, one must stay abreast of these trends in order to find a profitable niche. In the United States, travel is distinctly seasonal, and depending on the job in the

Pathways and/or Job Title Samples

Pathway: Food Production & Services

Baker/Pastry Chef
Bartender/Mixologist
Culinary Arts/Chef Training
Dietitian Assistant
Food & Beverage/Restaurant Operations Manager
Food Caterer
Foods, Dietetics & Nutrition/Food & Nutrition
Food Production & Services Workers & Administrators
Institutional Food Services Administrator
Kitchen Personnel/Cook & Assistant Training
Meatcutter
Waiter/Waitress & Dining Room Manager

Pathway: Lodging, Housekeeping, & Janitorial Services

Custodian/Caretaker
Custodial, Housekeeping, & Home Services Workers, & Managers
Executive Housekeeping

Pathway: Recreation, Gaming, & Sports

Card Dealer/Games of Chance Attendant
Parks, Recreation, & Leisure Facilities Management
Parks, Recreation & Leisure Studies
Sport & Fitness Administration/Management

Pathway: Travel & Tourism

Food Systems Administration
Hospitality/Administration Management
Hotel/Motel & Restaurant Management
Hotel/Motel Services Marketing Operations
Tourism Promotion Operations
Travel Services Marketing Operations
Travel-Tourism Management

Job Titles

Amusement & Recreation Attendants
Bartenders
Bus Drivers, Transit & Inter-city
Chefs and Head Cooks
Combined Food Preparation & Serving Workers, including Fast Food

Pathways and/or Job Title Samples

Cooks, Fast Food
Cooks, Institution & Cafeteria
Cooks, Restaurant
Cooks, Short Order
Counter & Rental Clerks
Counter Attendants, Cafeteria, Food
Concession, & Coffee Shop
Customer Service Representatives
Dining Room & Cafeteria Attendants
& Bartender Helpers
Dishwashers
First-Line Supervisors/Managers of
Food Preparation & Serving
Workers
Food Preparation Workers
Food Servers, Non-restaurant
Hosts & Hostesses
Lifeguards, Ski Patrol, & Other
Recreational Protective Service
Workers
Locker Room, Coatroom, & Dressing
Room Attendants
Massage Therapists
Meeting & Convention Planners
Receptionists & Information Clerks
Recreation Workers
Recreational Vehicle Service
Technicians
Reservation & Transportation Ticket
Agents
Taxi Drivers & Chauffeurs
Train Crew Members
Tour Guides & Escorts
Transportation Attendants, Flight
Attendants, & Baggage Porters
Travel Clerks
Travel Guides
Ushers, Lobby Attendants, & Ticket
Takers
Waiters & Waitresses

hospitality and tourism cluster, the worker may experience seasonal drop-off as well as a demanding peak season.

- Job turnover is relatively high in this industry. To attract and retain workers, the lodging industry is placing more emphasis on hiring and training.
- In management positions in the lodging industry, relocation is part of the job.
- Workers must bear a genuine willingness to serve others and truly enjoy people. Without these traits, advancement will be extremely difficult.
- While customer satisfaction drives the economy in Hospitality and Tourism, success is often measured by the smiles on consumers' faces.

Discussion Questions

What are five hotel chains in your area?

Are there any private resorts or hotels in the area? Bed and breakfasts or inns?

What is the appeal of the bed and breakfast?

Where do you and your family normally vacation?

Can you name a place in the United States that you would like to visit? Why?

How does one get training for entry-level jobs in the restaurant trades?

Human Services

Inside Track

Those interested in pursuing occupations in the Human Services career cluster are usually nurturing, empathic, and compassionate and are gratified by making a positive difference in the lives of others. Occupations are concerned with promoting and providing family and community relations and wellness, including family and work issues, religious services, care for the elderly, and social work. Job training and related service establishments train the unemployed, underemployed, disabled, and others with job market disadvantages. Many miscellaneous social services organizations are concerned with community improvement and social change.

Trends

Opportunities in Human Services are expected to be excellent, particularly for applicants with appropriate postsecondary education. The number of social and human services assistants is projected to grow much faster than the average for all occupations between 2004–2014, ranking the occupation among the most rapidly growing. Much of this new growth will be spurred by the private sector where the number of wage/salary positions is expected to increase. Of all the services within this highly diversified, service-oriented field, job training, vocational rehabilitation services, and residential care will grow the fastest and widest. The drawback, however, is that many of the new job openings will continue to be low-paying, entry-level, corporate jobs, where turnover will continue to be high. The fastest growing occupation is expected to be home health aide due to both a growing demand for home services from an aging population and efforts to contain costs by moving patients out of hospitals and nursing care facilities as quickly as possible. Overall employment of counselors is expected to grow faster than the average for all occupations through 2014. This is true as more states are requiring counselors at the elementary school level. Also, demand is expected to be strong for substance abuse and behavioral disorder counselors, because drug offenders are increasingly being sent to treatment programs rather than to jail. Other consumer groups with numbers on the rise are the mentally and physically disabled and families in crisis. Businesses are implementing more employee counseling programs to keep the workers they have and

Pathways and/or Job Title Samples

Pathway: Family & Consumer Sciences

Career, Community, & Family Studies
Consumer & Family Resources
Exploratory Occupational Family & Consumer Science
Management/Home Management
Consumer Economics & Science
Exploratory Home Management
Family Life & Relations Studies
Family Resource Management Studies
Nutrition & Wellness/Family/Individual Health
Parenting, Interpersonal Relations & Family/Family Living & Parenthood

Pathway: Social Services

Community Organization, Resources, & Services
Elder Care Provider/Companion
Gerontological Services
Homemaker's Aide
Social Work

Job Titles

Adoption Worker
Advocate
Background Investigator
Campus Social Worker
Case Aide
Case Worker
Child, Family, & School Social Workers
Child Protective Services/Adult Worker
Child Welfare Worker
Clergy
Clinical Social Worker (Licensed)
Community Living Coach
Community Outreach Specialist
Community Relations Manager
Community Resource Coordinator
Consultant, Care Coordination Services
Coordinator of Social Services Directors, Religious Activities & Education
Educational, Vocational, & School Counselors
Eligibility Determination Worker
Foster Care Worker
Health Educators
Hospital Social Worker

Pathways and/or Job Title Samples

Individual Therapist/Family Therapist
Job Coach
Marriage & Family Therapists
Medical & Public Health Social
Workers
Mental Health Behavioral Technicians
Mental Health Counselors
Mental Health & Substance Abuse
Social Workers
Occupational Therapists
Outreach Worker
Personal & Home Care Aides
Post-Adoptive Services
Prevention Center Coordinator
Probation Officers & Correctional
Treatment Specialists
Program Funds Coordinator
Psychiatric Social Workers
Rape Crisis Counselors
Records Coordinators
Rehabilitation Counselors
Residential Advisors
Residential Counselors
Social & Human Service Assistants
Social Services Managers
Substance Abuse & Behavioral
Disorder Counselors
Supervisors
Supported Housing Specialists
Vocational Counselors
Youth Care Workers

to make them more productive. Some occupations, such as child protective services and social workers, continue to demand more workers.

Considerations

- Turnover rates in human services jobs are large because on-the-job stress leads to burnout.
- Entry-level workers with only a high school diploma often make low wages yet are asked to endure long hours, week-end and “on-call” hours, and to maintain their composure while interacting with difficult clients.
- It takes a strong, committed individual to be successful. Tolerance is crucial.
- Advancement through the ranks is often commensurate with experience, longevity, and level of service, but above all, with level of education and certification. This is an important and difficult hurdle to clear in the Human Services career cluster for those wanting to move into management and administrative positions.
- Some occupations in social services have very specific entrance requirements. These include most of the professional specialty occupations. Those requiring specific clinical training, such as clinical social workers and psychologists, also require appropriate state licensure or certification.

Discussion Questions

Why are social workers commonly overworked and underpaid?
If you had to perform a social service/human service, what
would you do and why?
What are some private human service organizations?
What are some government-funded human service
organizations?

Information Technology

Inside Track

Those well-suited for jobs in the Information Technology career cluster are normally independent, result-oriented, and achievement-driven. Information technology (IT) positions deal with the design, development, management, maintenance, and operation of computer, information, communication, and technology networks, including related hardware and software. Advances in computer technology have had a significant effect on every segment of the labor market and labor pool. Computer applications continue to expand, along with our reliance upon them. The bubble of enthusiasm surrounding IT companies should continue to pull financial resources, research, and thereby, more workers into the field. Despite the recent economic downturn among technology firms, workers in the occupation should still enjoy favorable job prospects. The excitement of IT has become so accepted, that its presence in our lives is a bona fide cultural phenomenon. Job growth will not be as rapid as during the previous decade however, as the information technology sector begins to mature and as routine work is increasingly outsourced overseas.

Trends

Computer systems analysts, database administrators, and computer scientists are expected to be among the fastest growing occupations through 2014 as organizations continue to adopt and integrate increasingly sophisticated technologies. Computer software engineers are projected to be one of the fastest-growing occupations from 2004 to 2014. Rapid employment growth in the computer systems design and related services industry, which employs the greatest number of computer software engineers, should result in very good opportunities for those college graduates with at least a bachelor's degree in computer engineering or computer science and practical experience working with computers. Another rise in demand is the need for managers who are proficient in computer security issues. Firms will increasingly hire cyber-security experts, because the integrity of their computing environment is of utmost concern. Those who concentrate on specializing their computer skills should always be able to find work, as long as those specialties do not become outdated by the rapidly changing industry. Therefore, not only do potential workers need to find an area of demand,

Pathways and/or Job Title Samples

Pathway: Business Information Systems

Business Computer Facilities Operator
Business Computer Programming/
Programmer
Business Systems Analysis & Design
Business Systems Networking (LAN/
WAN) & Telecommunications
Data Processing Technology/Technician

Pathway: Computer Systems Analysis & Engineering Services

Computer Hardware Engineering
Computer Maintenance Technology/
Technician
Computer Software Engineering
Computer Systems Analysis
Information Sciences & Systems

Pathway: Hardware Support & Services

Computer Hardware Technology/
Technician
Computer Programming
Computer Science
Computer Software Technology/
Technician

Job Titles

Actuaries
Computer & Information Systems
Managers
Computer Operators
Computer Programmers
Computer Security Specialists
Computer Software Engineers,
Applications
Computer Software Engineers, Systems
Software
Computer Support Specialists
Computer Systems Analysts
Computer and Information Scientists,
Research
Database Administrators
Data Processing Equipment Repairers
Electrical and Electronics Engineers
Mathematical Technicians
Mathematicians
Network Systems and Data
Communications Analysts
Network & Computer Systems
Administrators
Numerical Tool & Process Control
Programmers

Pathways and/or Job Title Samples

Operations Research Analysts
Statisticians
Writers & Editors, including
Technical Writers

they need to keep abreast of how the technologies are advancing in order to supplement their skills.

Considerations

- Once workers are hired, they will need to keep retraining and retooling. The specialists today will be obsolete tomorrow unless they work to keep up.
- Technical or professional certification is a way to demonstrate a level of competency or quality in a particular field and may provide a job seeker with a competitive advantage.
- Relevant work experience and a bachelor's degree are prerequisites for many jobs; for more complex jobs, a graduate degree is preferred. Individuals with an advanced degree in computer science, computer engineering, or an MBA with a concentration in information systems should find very favorable employment prospects.
- Computer professionals who can combine strong technical skills with good interpersonal and business skills and graduates with non-computer science degrees who have had courses in computer science and other information technology areas should continue to find jobs as computer professionals.
- The potential for many workers to work from home is also attractive for those pursuing the IT field. Remote devices and telecommuting will enable more and more people to work at home.

Discussion Questions

What makes Northern Virginia a hot spot for the IT industry?

What is computer networking? Bandwidth? Script? Wireless?

What are three functions you can perform with a home PC that would not have been available 10 years ago?

What are several ways IT is revolutionizing the workplace?

Law, Public Safety, Corrections, & Security

Pathways and/or Job Title Samples

Inside Track

Those pursuing occupations in the Law, Public Safety, Corrections, and Security career cluster are normally good communicators and demonstrate keen inductive reasoning skills. Occupations within this cluster deal with police work, the law and legal services, the judicial system, the study and detention of criminals, and fire protection. Workers are often attracted to social structure and living within a moral/professional code. Lawyers and judges are often achievement-driven and value variety and social contact and recognition, while firefighters and police officers are often motivated by a sense of valor, responsibility, justice, and adventure. Competition for jobs in law and public safety is tremendous, even for lower paying jobs. The number of qualified candidates simply exceeds the number of job openings. Openings, however, have been recently on the rise in “specialized” areas of law practice and law enforcement.

Trends

Employment of police and detectives is expected to grow about as fast as the average for all occupations through 2014. Society seems to be more security-conscious, including a concern about drug-related crimes, thus increasing demand for police services. Despite this, reductions in federal hiring grants to local police departments and expectations of low crime rates by the general public will hinder employment growth. Employment of firefighters is expected to grow faster than the average for all occupations through 2014. Most of this job growth will result from volunteer firefighting positions being converted to paid positions in growing suburban areas. Employment of lawyers is expected to grow about as fast as average for all occupations through 2014, mostly because of population and general business growth, but also from increasing demand for legal services in areas such as health care, intellectual property, venture capital, energy, elder, antitrust, and environmental law. Employment for paralegals and legal assistants is projected to grow much faster than average for all occupations through 2014 as employers try to reduce costs and increase the availability and efficiency of legal services by hiring paralegals to perform tasks formerly carried out by lawyers.

Pathway: Criminal Justice & Corrections

Corrections/Correctional Administration
Criminology
Criminal Justice/Law Enforcement Administration
Criminal Justice Studies
First-Line Supervisors/Managers of Police and Detectives
Forensic Technology/Technician
First-Line Supervisors/Managers of Correctional Officers
Law Enforcement/Police Science
Security & Loss Prevention Services

Pathway: Fire Protection

Dispatchers, Police, Fire, & Ambulance
Fire Protection & Safety Technology/Technician
Fire Services Administration
Fire Science/Firefighting
Fire Inspectors
Fire Inspectors & Investigators
Fire Investigators
Fire-Prevention & Protection
Firefighters
First-Line Supervisors/Managers of Firefighting & Prevention Workers
Forest Firefighters
Forest Firefighting & Prevention Supervisors
Forest Fire Inspectors & Prevention Specialists
Municipal Firefighters
Municipal Fire Fighting & Prevention Supervisors

Pathway: Law & Legal Services

Administrative Law Judges, Adjudicators, & Hearing Officers
Arbitrators, Mediators, & Conciliators
Bailiffs
Correctional Officers & Jailers
Court Reporters
Criminal Investigators & Special Agents
Detectives & Criminal Investigators
Judges, Magistrate Judges, & Magistrates
Law Clerks
Lawyers

Pathways and/or Job Title Samples

Paralegal/Legal Assistant
Title Examiners, Abstractors, &
Searchers

Pathway: Fish & Game Wardens

Animal Control Workers
Gaming Surveillance Officers &
Gaming Investigators
Lifeguards, Ski Patrol, & Other
Recreational Protective Service
Workers
Parking Enforcement Workers

Pathway: Protective Service Workers

Crossing Guards
Police Detectives
Police & Sheriff's Patrol Officers
Private Detectives & Investigators
Security & Fire Alarm Systems
Installers
Security Guards
Sheriffs & Deputy Sheriffs
Transit & Railroad Police

Considerations

- The biggest concern to most considering a job in public safety is the personal safety factor. Police and fire protection work can be dangerous and extremely stressful. These workers are expected to exercise authority when necessary and to be alert at all times, whether on- or off-duty.
- In addition to the obvious dangers and the public profile officers must maintain in their communities, many of these men and women regularly witness death and suffering resulting from accidents and criminal behavior.
- Fire protection professionals also have to maintain a necessary objectiveness for the same reasons. A career in law enforcement and fire protection may take a serious toll on officers' private lives.
- On the other hand, those involved in these fields enjoy a high level of job security once they are employed. Turnover in police/detective work and fire protection is among the lowest of all occupations. While layoffs happen, experience can usually lead to further employment within the career cluster.
- Another benefit is the pension, which allows officers to retire after 20–25 years of service.
- The amount of time, money, and effort involved in acquiring a law degree and passing the bar is daunting.
- Employers increasingly seek graduates who have advanced law degrees and experience in a specialty such as tax, patent, or admiralty law.
- Becoming a judge will still be difficult in the coming years; not only must judicial candidates compete with other qualified people, they often must also gain political support in order to be elected or appointed.

Discussion Questions

Why is America becoming more and more litigious?

Can you think of any solutions to the serious issue of overcrowded prisons?

What is your relationship to and perception of the local police?

What are some responsibilities of fire rescue personnel?

What is the Virginia Bar?

What are some famous law schools, lawyers, judges, or court cases?

Manufacturing

Inside Track

Those who seek occupations in the Manufacturing career cluster are ordinarily hardworking producers and refiners of physical goods. Perhaps they are attracted to the precision, skill, repetition, and consistency of the tasks routinely involved. Perhaps they feel compelled by the amount of practical, hands-on, daily problem-solving situations they encounter. Or perhaps they are attracted to the sheer ingenuity and efficiency that is so much a part of these jobs. Whatever the case, occupations in manufacturing deal with the process of creating intermediate and finished products beginning with raw materials. Occupations include areas of managing, planning, and performing the production of various items by operating machinery, as well as industrial support activities such as production planning and control and maintenance. Due to the diverse nature of occupations in the Manufacturing career cluster, the following description will be to one industry segment: electronics manufacturing. Gaining momentum from new technological advances, electronics manufacturing is currently the most dynamic of all the manufacturing groups and is expected to contribute the majority of the new jobs within the cluster over the next decade. Many new computer and telecommunications products are presently under development, and the current market demands this sort of dual focus: research and development (R&D) and physical manufacturing.

Trends

Overall, employment in Manufacturing is predicted to be slow. Despite the overall projected decrease in employment, the technological revolutions taking place in computers, semiconductors, and telecommunications, as well as the need to replace the many workers who leave the industry due to retirement or other reasons, should continue to provide many employment opportunities in this industry, especially in research and development. Products of this industry, especially powerful computer chips, will continue to enhance productivity in all areas of the economy. Employment prospects are good for highly-skilled technical personnel, but employment of production workers will grow slowly. Assembly and packaging are becoming highly automated or have moved to other countries where the labor is cheap. However, the need for complex electronics

Pathways and/or Job Title Samples

Pathway: Industrial Management

Hazardous Materials Information
Systems Technology/Technician
Industrial & Organizational Psychology
Industrial Management
Industrial/Occupational Hygiene
Industrial Safety/Occupational Safety
Operations Management & Supervision
Quality Control Technology/Technician

Pathway: Industrial Technology & Maintenance

Industrial Electronics Installer & Repairer
Industrial Machinery Maintenance &
Repairer
Machinist
Machine Shop Assistant
Precision Metal & Machining
Sheet Metal Worker
Stationary Energy Sources Installer &
Repairer
Tool & Die Maker/Technologist
Welder/Welding Technologist

Pathway: Production Operations

Commercial Garment & Apparel Worker
Computer Typography & Composition
Equipment Operator
Furniture Designer & Maker
Lithographer & Platemaker
Printing Press Operator
Upholsterer

Job Titles

Aircraft Structure, Surfaces, Rigging, &
Systems Assemblers
Bakers
Bookbinders
Butchers & Meat Cutters
Cabinetmakers & Bench Carpenters
Chemical Plant & System Operators
Computer-Controlled Machine Tool
Operators, Metal and Plastic
Dental Laboratory Technicians
Drilling & Boring Machine Tool Setters,
Operators, and Tenders
Electrical & Electronic Equipment
Assemblers
Electromechanical Equipment
Assemblers
Engine & Other Machine Assemblers
Etchers & Engravers
Fabric & Apparel Patternmakers
Fiberglass Laminators & Fabricators

Pathways and/or Job Title Samples

Food and Tobacco Roasting, Baking, &
Drying Machine Operators
Foundry Mold & Coremakers
Furniture Finishers
Gas Plant Operators
Helpers—Production Workers
Inspectors, Testers, Sorters, Samplers,
& Weighers
Jewelers and Precious Stone & Metal
Workers
Job Printers
Machinists
Medical Appliance Technicians
Model Makers
Nuclear Power Reactor Operators
Numerical Tool & Process Control
Programmers
Ophthalmic Laboratory Technicians
Packaging and Filling Machine Operators
& Tenders
Painting, Coating, & Decorating
Workers
Patternmakers
Petroleum Pump System Operators,
Refinery Operators, and Gaugers
Photographic Process Workers
Photographic Processing Machine
Operators
Pourers & Casters
Power Distributors & Dispatchers
Power Plant Operators
Prepress Technicians & Workers
Pressers, Textile, Garment, & Related
Materials
Printing Machine Operators
Semiconductor Processors
Shoe and Leather Workers & Repairers
Slaughterers & Meat Packers
Stationary Engineers & Boiler Operators
Structural Metal Fabricators & Fitters
Tailors, Dressmakers, & Custom Sewers
Tool & Die Makers
Upholsterers
Water and Liquid Waste Treatment Plant
& System Operators
Welders

manufacturing to be located near its research site may help to moderate the move abroad. Employment of machinists is projected to grow more slowly than average for all occupations over the 2004–14 period because of rising productivity among these workers and strong foreign competition.

Considerations

- The electronics manufacturing industry differs from other manufacturing industries in that production workers account for a much lower proportion of all workers.
- The unusually rapid pace of innovation and technological advancement requires a high proportion of engineering and technical workers to continually develop and produce new products.
- American companies manufacture and assemble many products abroad because of lower production costs and new trade agreements.
- However, the growing complexity of some of the most highly technical production processes—in semiconductor and electronic component manufacturing in particular—is leading to increased demand for a more highly skilled work force in the United States.
- Electronics manufacturing has become truly global, and it is difficult to characterize many companies and their products as American or foreign.
- Although some of the companies in this industry are large, most are small.
- Production workers need to be able to deal with producing accurately under deadlines and pressure. Research and development people must demonstrate innovative thinking.

Discussion Questions

On an international level, which nations are the greatest competitors for the U.S. in electronics manufacturing?

Can you name some products you use that are, in part, the result of electronics manufacturing?

Why do electronics manufacturing companies spend so much of their resources on research and development (R&D)?

Marketing, Sales, & Service

Inside Track

Those well-suited to most positions in the Marketing, Sales, and Service career cluster are typically effective communicators, extremely observant, and skilled at both reading and manipulating consumers. Retailing and wholesaling deals with marketing, advertising, or otherwise promoting and selling merchandise, and includes managing retail establishments, making merchandise-specific repair, and providing personal services (e.g., cosmetics, hairstyling, funeral services) to consumers. Wholesalers sell mass quantities of products to businesses, governments, or institutions for resale. Retailers sell products and goods directly to the public. Nearly 70 percent of the workforce in wholesale are in clerical, sales, or operator and laborer occupations. Job titles in the retail/wholesale cluster abound, but the following information will be limited to department, clothing, and accessory stores and to wholesale trade. For information regarding other segments of this career cluster, consult the *Occupational Outlook Handbook* (see Resources).

Trends

Employment of sales representatives, wholesale, and manufacturing, is expected to grow about as fast as average for all occupations through the year 2014, primarily because of continued growth in the variety and number of goods to be sold. As in the past, employment opportunities for retail salespersons are expected to be good because of the need to replace the large number of workers who transfer to other occupations or leave the labor force each year. Despite the growing popularity of electronic commerce, Internet sales have not decreased the need for retail salespersons. Retail stores commonly use an online presence just to complement their in-store sales. Online alternatives and catalog shopping will continue to have an impact on technical writers, designers, layout artists, photographers, models, Web developers, e-commerce systems operators, and anyone else associated with these production/advertising positions in retail. Employment of travel agents is expected to decline through 2014. Travel agents who specialize and can use the Internet to reduce their costs and better compete with other travel suppliers should have the best chance for success. The

Pathways and/or Job Title Samples

Pathway: Fashion Merchandising & Design

Commercial Garment & Apparel
Custom Tailor
Fashion & Fabric Consultant
Fashion Design & Illustration
Fashion Merchandising
Fashion Modeling
Textiles & Apparel/Clothing & Textiles

Pathway: Interior Merchandising & Design

Home Furnishings
Housing Interiors, & Furnishings/
Housing, Home Furnishings &
Equipment
Interior Design

Pathway: Marketing & Public Relations

Advertising
Business Communications
Business Marketing & Marketing
Management
Food Products Retailing & Wholesaling
Operations
General Buying Operations
General Retail Operations
General Selling Skills & Sales
Operations
International Business Marketing
Marketing Research
Public Relations & Organizational
Communications
Real Estate
Vehicle Parts & Accessories Marketing
Operations

Pathway: Personal Services

Barber/Hairstylist
Cosmetologist/Esthetician
Electrolysis Technician
Funeral Services & Mortuary Science
Massage (nontherapeutic)

Job Titles

Advertising Sales Agents
Cashiers
Counter & Rental Clerks
Demonstrators & Product Promoters
Door-to-Door Sales Workers, News
& Street Vendors, & Related
Workers
First-Line Supervisors/Managers of
Non-Retail Sales Workers

Pathways and/or Job Title Samples

First-Line Supervisors/Managers of
Retail Sales Workers
Gaming Change Persons & Booth
Cashiers
Insurance Sales Agents
Models
Parts Salespersons
Real Estate Brokers
Real Estate Sales Agents
Retail Salespersons
Sales Engineers
Sales Representatives, Wholesale &
Manufacturing, Technical &
Scientific Products
Securities, Commodities, &
Financial Services Sales Agents
Telemarketers
Travel Agents

trend toward consolidation of wholesale trade firms into fewer and larger companies is likely to remain strong. The job turnover rate is expected to be tremendous as usual, thus providing opportunities for those looking for entry-level jobs that do not require a great amount of extra training or education.

Considerations

- Traditionally, capable salespeople possessing good leadership skills could advance to management positions in department, clothing, and accessory retail without a college degree; however, a college education is becoming increasingly important for managerial positions such as department manager, store manager, and buyer.
- Computer skills are extremely important in all parts of the industry, especially in areas such as inventory control, human resources, sales forecasting, and electronic commerce.
- Many jobs are part-time, and employees are on duty during peak selling hours, whenever they may occur, including some nights, weekends, and holidays. Because weekends are busy days in retailing, almost all employees work at least one of these days and have a weekday off.
- Marketing and sales occupations make up approximately 40 percent of the industry. Jobs in department, clothing, and accessory retail will be available for young workers, first-time job seekers, persons with limited job experience, senior citizens, and people seeking part-time work, such as those with young children or those who wish to supplement their income from other jobs.

Discussion Questions

Why is there such a high turnover rate in department, clothing, and accessory retail jobs?

What are some of your favorite local retailers, and why do you like them?

What do you think of the service you receive in your average retail shopping experience? Would you render service differently? If so, how?

How might you apply elsewhere, the entry-level experience you get from working a retail or wholesale job?

What are some products that you might see wholesaled instead of retailed? Who would buy these products?

Science, Technology, Engineering, & Mathematics

Pathways and/or Job Title Samples

Inside Track

Those attracted to professions in the Science, Technology, Engineering, and Mathematics career cluster are often extremely analytical and driven to structured and logical-thinking environments. They enjoy solving puzzles, finding solutions to problems, and overcoming obstacles. Educational programs and occupations in this career cluster deal with engineering, related technologies, scientific research, and application of scientific principles in all the natural sciences (e.g., biology, chemistry, earth science, physics) and social sciences (e.g., economics, sociology, geography, archeology, anthropology).

Note: If a student cannot locate a job title he or she is searching for in the sidebar to the right, that listing may be found in a related career cluster.

Trends

Job opportunities in science technician training programs and applied science technology programs are expected to be very good for qualified graduates who are well trained on equipment used in laboratories and production facilities. Overall engineering employment is expected to grow about as fast as the average for all occupations over the 2004–14 period. Engineering technician jobs are expected to increase as fast as the average for all occupations through 2014. Employment of environmental scientists is expected to grow about as fast as the average for all occupations through 2014, while employment of hydrologists should grow much faster than average. Job growth for environmental scientists and hydrologists should be strongest at private-sector consulting firms. Public policy will increase demand for environmental scientists and hydrologists, and companies and organizations will be forced to comply with complex environmental laws and regulations, especially those regarding ground-water decontamination, clean air, and flood control. Job opportunities also will be spurred by a continued general awareness regarding the need to monitor the quality of the environment, to interpret the impact of human actions on terrestrial and aquatic ecosystems, and to develop strategies for restoring ecosystems. Employment of mathematicians is expected to decline through 2014, reflecting the decline in the number of jobs with the title “mathematician.” Employment of electrical

Pathway: Engineering

Aerospace, Aeronautical, & Astronautical Engineering

Agricultural Engineering
Architectural Engineering
Bioengineering & Biomedical Engineering
Ceramic Sciences & Engineering
Chemical Engineering
Construction Engineering
Electrical, Electronic, & Communication Engineering
Engineering Management
Engineering Mechanics
Engineering Physics
Engineering Science
Environmental/Environmental Health Engineering
Forest Engineering
Geological Engineering & Geophysical Engineering
Industrial Engineering
Manufacturing Engineering
Materials Engineering
Materials Science
Mechanical Engineering
Metallurgical Engineering
Mining & Mineral Engineering
Naval Architecture & Marine Engineering
Nuclear Engineering
Ocean Engineering
Petroleum Engineering
Polymer/Plastics Engineering
Surveying Engineering
Systems Engineering
Textile Sciences & Engineering
Transportation & Highway Engineering
Water Resources Engineering

Pathway: Engineering Technologies

Aeronautical & Aerospace Engineering Technology/Technician
Air Conditioning Technology/Technician
Architectural Drafting
Automotive Engineering Technology/Technician
CAD/CAM Design Application Technology/Technician
Chemical Technology/Technician
Civil/Structural Drafting

Pathways and/or Job Title Samples

Drafting/Design Engineering
Technology/Technician
Electrical, Electronic, &
Communications Engineering
Technology/Technician
Electrical/Electronic Drafting
Electromechanical Technology/
Technician
Environmental/Hazardous Materials &
Pollution Control Technology/
Technician
Energy Management & Systems
Technology/ Technician
Hydraulic Technology/Technician
Industrial Radiologic Technology/
Technician
Industrial Technology/Technician
Instrumentation Technology/Technician
Laser & Optical Technology/
Bioengineering Technology/
Technician
Metallurgical Technology/Technician
Manufacturing/Engineering
Technology/Technician
Mechanical Engineering Technology/
Technician
Mechanical Drafting
Nuclear Engineering Technology/
Technician
Nuclear/Nuclear Power Technology/
Technician
Occupational Safety & Health
Technology/ Technician
Plastics Technology/Technician
Robotics Technology/Technician
Telecommunications Technology/
Technician
Water Quality & Waste Management &
Recycling Technology/Technician

Pathway: Natural Sciences

Anatomy
Bacteriology
Biochemistry
Biological & Physical Sciences
Biological Immunology
Biotechnology Research
Cell Biology
Development Biology/
Embryology
Ecology
Food & Nutrition Science
Genetics, Human & Animal
Genetics, Plant & Animal
Hydrology & Water Resources
Marine/Aquatic Biology
Medical/Pharmaceutical
Chemistry
Microbiology

and electronics engineers is expected to grow more slowly than the average for all occupations through 2014. Job growth is expected to be fastest in services industries—particularly consulting firms that provide electronic engineering expertise.

Considerations

- Science technicians help invent and improve products and processes, set up, operate, and maintain laboratory instruments, monitor experiments, make observations, calculate and record results, and often develop conclusions. These are the hands-on, practical workers of the science trades.
- Like engineers, employment of engineering technicians is influenced by local and national economic conditions. New specialties, such as fire protection engineering technology, will contribute to job growth.

Discussion Questions

What are the exciting new industries within scientific research and engineering?

Can you name some other career clusters in which you might find job titles that also fall under scientific research and engineering?

What is genome science?

What are some effects of scientific research and engineering in your daily life?

What are the names of some familiar companies or agencies that participate primarily in the scientific research and engineering field?

Molecular Biology
Nuclear Engineers
Nuclear Technicians
Nutritional Services
Optical Instrument Assemblers
Pathology, Human & Animal
Petroleum Engineers
Physicists
Physiology, Human & Animal
Plant Genetics
Plant Pathology
Plant Physiology
Political Scientists
Social Science Research Assistants
Sociologists
Soil & Plant Scientists

Survey Researchers
Surveying & Mapping
Technicians
Surveyors
Urban & Regional Planners
Zoologists & Wildlife Biologists

Transportation, Distribution, & Logistics

Pathways and/or Job Title Samples

Inside Track

Those interested in pursuing occupations in the Transportation, Distribution, and Logistics career cluster are normally practical, hands-on, problem solvers. They tend to be independent and value their solitude. They deal with physical materials and are adept at physical labor. Occupations in the cluster are diverse and deal with planning and managing the movement of people, materials, and goods by road, pipeline, air, rail, and water. Services include related professional and technical support services such as transportation planning and management, logistics services, and mobile equipment and facility maintenance. The rapid development of air transportation has increased the mobility of the population and created thousands of job opportunities. Air transportation includes taxi companies, commuter airlines, courier services, and big commercial airlines. Truck drivers hold one-half of all trucking and warehousing jobs and provide the crucial link between manufacturers and consumers. The growth of logistics services has blurred the distinction between trucking and warehousing. Logistics services include the distribution of goods, such as inventory control and management, order entry and fulfillment, labeling, light assembly, packaging, and price marking. This industry includes two distinct segments: local and long-distance trucking and terminals, and public warehousing and storage. Some local truck transportation firms also take on sales and customer relations responsibilities, in addition to delivering the firm's products.

Trends

Wage and salary jobs in the air transportation industry are projected to increase about as fast as the average for all industries through 2014. The passenger airline industry is undergoing many changes. After September 11, 2001, air travel saw a great drop in numbers. It is expected that job opportunities will continue at regional and low-fare carriers, which are growing faster than the more well-known major airlines. Pilots understandably have a strong attachment to their occupation because it requires a substantial investment in specialized training and offers very high earnings. Therefore, little turnover is expected. Job opportunities should be more favorable among flight attendants and aircraft mechanics. For mechanics, opportunities should be better with rapidly growing commuter and regional airlines and at FAA

Pathway: General Distribution

Logistics & Materials Management
Parts, Warehousing, & Inventory
Management Operations
Parts & Warehousing Operations &
Maintenance Technology/
Technician

Pathway: Transportation

Air Traffic Controller
Aircraft Pilot & Navigator, Fixed Wing
Aircraft Pilot & Navigator, Rotary
Wing
Aviation Management
Flight Attendant
Flight Instructor, Fixed Wing
Flight Instructor, Rotary Wing
Specialist, Pilot Ratings

Pathway: Vehicle & Mobile

Equipment Installation & Repairs

Auto/Automotive Body Repairer
Auto/Automotive Mechanics/
Technician
Aircraft Mechanic/Technician,
Airframe
Aircraft Mechanic/Technician,
Powerplant
Aviation Systems & Avionics
Maintenance Technology/Technician
Diesel Engine Mechanics & Repair
Heavy Equipment Maintenance &
Repairer
Motorcycle Mechanic & Repairer
Small Engine Mechanics & Repair
Vehicle Emissions Inspection &
Maintenance Technology/
Technician

Job Titles

Air Traffic Controllers
Aircraft Cargo Handling Supervisors
Airfield Operations Specialists
Airline Pilots, Copilots, & Flight
Engineers
Ambulance Drivers & Attendants
Bridge and Lock Tenders
Bus Drivers
Captains, Mates, & Pilots of Water
Vessels
Cleaners of Vehicles & Equipment
Commercial Pilots
Conveyor Operators & Tenders
Crane and Tower Operators
Dredge Operators

Pathways and/or Job Title Samples

Excavating & Loading Machine
& Dragline Operators
First-Line Supervisors/Managers of
Helpers, Laborers, & Material Movers,
Hand
First-Line Supervisors/Managers of
Transportation & Material-
Moving Machine & Vehicle
Operators
Gas Compressor & Gas Pumping
Station Operators
Hoist & Winch Operators
Industrial Truck & Tractor
Operators
Laborers & Freight, Stock, &
Material Movers, Hand
Loading Machine Operators,
Underground Mining
Locomotive Engineers
Locomotive Firers
Motorboat Operators
Packers & Packagers, Hand
Parking Lot Attendants
Pump Operators, except Wellhead
Pumpers
Rail Yard Engineers, Dinkey
Operators, & Hostlers
Railroad Brake, Signal, & Switch
Operators
Railroad Conductors & Yardmasters
Refuse & Recyclable Material
Collectors
Sailors & Marine Oilers
Service Station Attendants
Ship Engineers
Shuttle Car Operators
Subway & Streetcar Operators
Tank Car, Truck, & Ship Loaders
Taxi Drivers & Chauffeurs
Traffic Technicians
Transportation Inspectors
Truck Drivers, Heavy & Light
Wellhead Pumpers

repair stations. Opportunities are also expected to remain good among unskilled entry-level positions. In trucking, employment is expected to grow about as fast as the average for all occupations through the year 2014. Demand for long-distance drivers will remain strong because these drivers transport perishable and time-sensitive goods more efficiently than do alternative modes of transportation, such as railroads. Employment of most railroad transportation occupations is expected to decline through the year 2014. Water transportation is projected to grow more slowly than average through 2014. Best opportunities for employment growth are for passenger cruise ships within U.S. waters, scenic, sightseeing, deep sea, coastal, and Great Lakes transportation. Employment in material moving occupations will increase more slowly than average for all occupations through 2014. Employment growth will stem from an expanding economy and increased spending on the nation's infrastructure, such as highways and bridges.

Considerations

- Flight crews, especially those on international routes, often suffer jet lag—disorientation and fatigue caused by flying into different time zones. Some personnel may work under pressure to meet flight schedules. Still, the pay is relatively good throughout the industry, and the benefits of travel are enticing for many.
- Truck drivers must cope with a variety of working conditions including variable weather and traffic conditions, boredom, and fatigue. Drivers frequently travel at night, on holidays, and weekends to avoid traffic delays and to deliver cargo on time. Truck driving pays relatively well, but many persons leave the career because of the lengthy periods away from home and the long hours of driving.
- Stricter requirements for obtaining—and keeping—a commercial driver's license also make truck driving more difficult as a career.
- Safety is a major concern of the trucking and warehousing industry. Efforts are underway to standardize the training programs to make the drivers more efficient and effective truck operators.

Discussion Questions

How has technology affected this career cluster?

Can you name some pros and cons of becoming a flight attendant or a member of a flight crew?

Traveling the Road



The Road Ahead

INVESTIGATING THE CAREER CLUSTER

Based on what the students have learned about themselves through this unit, they are probably finding themselves gravitating to one or more of the 16 career clusters. The next step is to synthesize their personal information with career discovery.

The **first activity** highlights an important factor for students to consider: a strong personal characteristic, such as attentiveness or endurance, can lead to dissimilar careers in different clusters. The **second activity** asks the students general career cluster questions that can be applied regardless of their choice. **Career Exploration** is based on Web site research. The duration for student research is flexible. These summarize the unit and lead to the last item, a student checklist: **The Next Step**.

Activity: Similar Characteristics Occupations

Have students visit One-Stop Career System Multimedia Career Video List at http://web1.dol.state.nj.us/coei/CareerVideos/careervideos_list.html. Have them scroll to the last item: “Similar Characteristics Occupations” and view several videos. This activity illustrates that skill sets can cross a wide variety of careers. For example, if a person has strong attentiveness skills, they have a good chance of success in careers as varied as a crime investigator, pharmacist, nurse, musician, manufacturing, or a referee. All of these require attentiveness.

Activity: Career Cluster

Divide students into groups corresponding to their career cluster of choice. Students should have their job titles in mind but remain focused on studying the career cluster to make a group presentation.

Students should choose at least three different pathways within the cluster and use that information when analyzing the following:

1. Define the essence of the career cluster. What is the essential connection that links every job title in the cluster?
2. Name some traditional pathways within the cluster.

Notes

Notes

3. Name some new, contemporary, or recently revitalized industry groups within the cluster.
4. List some job titles in the cluster that interest you.
5. List some job titles that might be listed in another cluster as well as the one under examination.
6. List some exciting new job titles within the cluster.
7. Predict the future for the cluster. Is it gaining or losing importance? Justify your answer.
8. Select four job titles within the cluster. List some industry trends both on a national and state level. Make projections based on history and/or other reliable sources. Address the following issues:
 - salary
 - openings/closings
 - job security
 - job longevity
9. List any environmental concerns, such as
 - weather issues
 - political climate
 - economy
 - consumer trends.

Career Exploration

1. Explore the following Web sites. You may decide that you are partial to one Web site, or you may want to combine elements of different ones. Take a self-assessment survey, investigate various career clusters, areas, and roles, and examine the related education and training. Take good notes of your exploration to use for your essay and for “The Next Step” activity. It would be a good idea to read “The Next Step” activity before beginning your search, so you will know some of the questions you will need to answer.

Career Prospects of Virginia

<http://www.careerprospects.org>

KnowHowVirginia

<http://www.knowhowvirginia.org/>

Kuder: Virginia Career Planning System

<http://www.va.kuder.com>

Occupational Outlook Handbook, 2006–07 Edition

<http://www.bls.gov/oco/>

Virginia Career VIEW

<http://www.vacareerview.org>

VTECS and Career Clusters

<http://www.v-tecs.org/careerclusters.htm>

2. Narrow your research to one job title.
3. Based on your research, write an essay regarding your job title search. Use the first-person point of view. In your essay, address the following in order:
 - a. Introduce the career cluster and your job title.
 - b. Describe your search. How did it go?
 - c. Describe the education requirements and how you think you will meet them.
 - d. Do the same for job-skills training.
 - e. Describe your strengths—things that would make you a “good fit” for the job you want.
 - f. Describe your weaknesses—things that would make both getting and keeping the job difficult.
 - g. Did you learn anything new about your potential career? If so, what? If not, why not?
 - h. Overall, consider the positive and negative aspects of your potential career choice. Do you think you are well suited for this job? If so, why? If not, why?

The Next Step

To be completed by student....

Based on your research and what you know about your future, make some immediate plans that could help you jump into a career and land the job you want. Check all that apply.

EDUCATION

1. What career path do you plan to pursue?

- ☐ high school only/GED
- ☐ high school/CTE program in your field of study
- ☐ junior college
- ☐ traditional 4-year university
graduate school...
 - ☐ Master's level
 - ☐ Higher/other
- ☐ completely self-taught
- ☐ other, please list

JOB TRAINING

2. How will you learn job skills?

- ☐ friends/family members
- ☐ current/future co-workers
- ☐ internship/fellowship/apprenticeship
- ☐ co-op education
- ☐ Career and Technical Education (CTE)
- ☐ entry-level job in the field
- ☐ military
- ☐ Peace Corps
- ☐ other, please list

CAREER EDUCATION

3. From which source(s) will you seek help with career planning?

- ☐ friends/family members
- ☐ teachers
- ☐ *r u ready?*
- ☐ counselors
- ☐ employment agency, professional
- ☐ employment agency, government
- ☐ other community institution, please name
- ☐ self-directed online search
- ☐ other research methods, please name
- ☐ do not plan to investigate career options, please give reason
- ☐ need no further guidance, please give reason

4. List some entry-level job titles that might help you get closer to the job you're seeking.

5. Name some industry trends (e.g., salary, openings/closings, job security, job longevity) in the career cluster that interests you.

... National-level

Virginia

6. List any environmental concerns (e.g., weather, political climate, economy, consumer trends) that may affect your potential job.

7. What do you feel is the largest obstacle that may prevent you from getting the career you seek?

8. What are your biggest misgivings about the career field/job you wish to enter?

9. Which personality trait(s) will help you make the transition into your career role?

10. Would you like to set an appointment to speak with a school counselor regarding your career plans?

☐ Yes

☐ No

11. Contact Information (all answers optional)

Name:

Grade level:

Phone number:

E-mail:

Student identification number:

Related Academic Standards of Learning

Academic Standards of Learning are an essential component of career and technical education and are required to be successful in an occupational field. The identification of related academic Standards of Learning that are reinforced through application in career and technical courses supports and enhances academic instruction.

Instruction in Career Connections programs and courses incorporates and reinforces Virginia Standards of Learning as stated in *Standards of Learning for Virginia Public Schools*. Identified on the following pages are specific Standards of Learning that are reinforced through discussions and activities in *ready or not*. Local school divisions may wish to identify additional Standards of Learning as reflected in instructional activities and cooperative efforts with other disciplines.

English

Oral Language

11.1 The student will make informative and persuasive presentations.

- Gather and organize evidence to support a position.
- Present evidence clearly and convincingly.
- Support and defend ideas in public forums.
- Use grammatically correct language, including vocabulary appropriate to the topic, audience, and purpose.

11.2 The student will analyze and evaluate informative and persuasive presentations.

- Critique the accuracy, relevance, and organization of evidence.
- Critique the clarity and effectiveness of delivery.

Reading Analysis

11.4 The student will read and analyze a variety of informational materials.

- Use information from texts to clarify or refine understanding of academic concepts.
- Read and follow directions to complete an application for college admission, for a scholarship, or for employment.
- Apply concepts and use vocabulary in informational and technical materials to complete a task.
- Generalize ideas from selections to make predictions about other texts.
- Analyze information from a text to draw conclusions.

Writing

11.7 The student will write in a variety of forms, with an emphasis on persuasion.

- Generate, gather, plan, and organize ideas for writing.
- Develop a focus for writing.
- Evaluate and cite applicable information.
- Organize ideas in a logical manner.
- Elaborate ideas clearly and accurately.
- Adapt content, vocabulary, voice, and tone to audience, purpose, and situation.
- Revise writing for accuracy and depth of information.
- Proofread final copy and prepare document for intended audience and purpose.

Research

11.10 The student will analyze, evaluate, synthesize, and organize information from a variety of sources to produce a research product.

- Narrow a topic.
- Develop a plan for research.
- Collect information to support a thesis.
- Evaluate quality and accuracy of information.
- Synthesize information in a logical sequence.
- Document sources of information, using a style sheet, such as that of the Modern Language Association (MLA) or the American Psychological Association (APA).
- Edit writing for clarity of content and effect.
- Edit copy for grammatically correct use of language, spelling, punctuation, and capitalization.
- Proofread final copy and prepare document for publication or submission.
- Use technology to access information, organize ideas, and develop writing.

Oral Language

12.1 The student will make a 5 to 10 minute formal oral presentation.

- a) Choose the purpose of the presentation: to defend a position, to entertain an audience, or to explain information.
- b) Use a well-structured narrative or logical argument.
- c) Use details, illustrations, statistics, comparisons, and analogies to support purposes.
- d) Use visual aids or technology to support presentation.
- e) Use grammatically correct language, including vocabulary appropriate to the topic, audience, and purpose.

12.2 The student will evaluate formal presentations.

- a) Critique relationships among purpose, audience, and content of presentations.
- b) Critique effectiveness of presentations.

Reading Analysis

12.4 The student will read and analyze a variety of informational materials, including electronic resources.

- a) Identify formats common to new publications and information resources.
- b) Recognize and apply specialized informational vocabulary.
- c) Evaluate a product based on analysis of the accompanying warranty and instruction manual.
- d) Evaluate the quality of informational and technical materials.

Writing

12.7 The student will develop expository and informational writings.

- a) Generate, gather, and organize ideas for writing.
- b) Consider audience and purpose when planning for writing.
- c) Write analytically about literary, informational, and visual materials.
- d) Elaborate ideas clearly and accurately.
- e) Revise writing for depth of information and technique of presentation.
- f) Apply grammatical conventions to edit writing for correct use of language, spelling, punctuation, and capitalization.
- g) Proofread final copy and prepare document for publication or submission.

History and Social Science

Skills

VS.1 The student will develop skills for historical and geographical analysis including the ability to

- a) identify and interpret primary and secondary source documents to understand events in history;
- b) determine cause and effect relationships;
- c) compare and contrast historical events;
- d) draw conclusions and make generalizations;
- e) make connections between past and present;
- f) sequence events in Virginia history;
- g) interpret ideas and events from different historical perspectives;
- h) evaluate and discuss issues orally and in writing;
- i) analyze and interpret maps to explain relationships among landforms, water features, climatic characteristics, and historical events.

Virginia: 1900 to the Present

VS.10 The student will demonstrate knowledge of government, geography, and economics by

- a) identifying the three branches of Virginia government and the function of each;
- b) describing the major products and industries of Virginia's five geographic regions;
- c) explaining how advances in transportation, communications, and technology have contributed to Virginia's prosperity and role in the global economy.

The United States since World War II

USII.7 The student will demonstrate knowledge of the economic, social, and political transformation of the United States and the world between the end of World War II and the present by

- a) describing the rebuilding of Europe and Japan after World War II, the emergence of the United States as a superpower, and the establishment of the United Nations;
- b) describing the conversion from a wartime to a peacetime economy;
- c) identifying the role of America's military and veterans in defending freedom during the Cold War, including the wars in Korea and Vietnam, the Cuban missile crisis, the collapse of communism in Europe, and the rise of new challenges;
- d) describing the changing patterns of society, including expanded educational and economic opportunities for military veterans, women, and minorities

Civics and Economics

CE.4 The student will demonstrate knowledge of personal character traits that facilitate thoughtful and effective participation in civic life by

- a) practicing trustworthiness and honesty;
- b) practicing courtesy and respect for the rights of others;
- c) practicing responsibility, accountability, and self-reliance;
- d) practicing respect for the law;
- e) practicing patriotism.

CE.9 The student will demonstrate knowledge of how economic decisions are made in the marketplace by

- a) applying the concepts of scarcity, resources, choice, opportunity cost, price, incentives, supply and demand, production, and consumption;
- b) comparing the differences among free market, command, and mixed economies;
- c) describing the characteristics of the United States economy, including free markets, private property, profit, and competition.

CE.10 The student will demonstrate knowledge of the structure and operation of the United States economy by

- a) describing the types of business organizations and the role of entrepreneurship;
- b) explaining the circular flow that shows how consumers (households), businesses (producers), and markets interact;
- c) explaining how financial institutions encourage saving and investing;
- d) examining the relationship of Virginia and the United States to the global economy, with emphasis on the impact of technological innovations.

CE.11 The student will demonstrate knowledge of the role of government in the United States economy by

- a) examining competition in the marketplace;
- b) explaining the creation of public goods and services;
- c) describing the impact of taxation, including an understanding of the reasons for the 16th amendment, spending, and borrowing;
- d) explaining how the Federal Reserve System regulates the money supply;
- e) describing the protection of consumer rights and property rights.

CE.12 The student will demonstrate knowledge of career opportunities by

- a) identifying talents, interests, and aspirations that influence career choice;
- b) identifying attitudes and behaviors that strengthen the individual work ethic and promote career success;

- c) identifying skills and education that careers require;
- d) examining the impact of technological change on career opportunities.

Era VIII: The Post War Period, 1945 to the Present

WHII.12 The student will demonstrate knowledge of major events and outcomes of the Cold War by

- a) explaining key events of the Cold War, including the competition between the American and Soviet economic and political systems and the causes of the collapse of Communism in the Soviet Union and Eastern Europe;
- b) assessing the impact of nuclear weaponry on patterns of conflict and cooperation since 1945;
- c) describing conflicts and revolutionary movements in eastern Asia, including those in China and Vietnam, and their major leaders, i.e., Mao Tse-tung (Zedong), Chiang Kai-shek, and Ho Chi Minh.

WHII.15 The student will demonstrate knowledge of cultural, economic, and social conditions in developed and developing nations of the contemporary world by

- a) identifying contemporary political issues, with emphasis on migrations of refugees and others, ethnic/religious conflicts, and the impact of technology, including chemical and biological technologies;
- b) assessing the impact of economic development and global population growth on the environment and society, including an understanding of the links between economic and political freedom;
- c) describing economic interdependence, including the rise of multinational corporations, international organizations, and trade agreements.

World Geography

WG.7 The student will identify natural, human, and capital resources and explain their significance by

- a) showing patterns of economic activity and land use;
- b) evaluating perspectives and consequences regarding the use of resources.

WG.9 The student will analyze the global patterns and networks of economic interdependence by

- a) identifying criteria that influence economic activities;

- b) explaining comparative advantage and its relationship to international trade;
- c) describing ways that economic and social interactions have changed over time;
- d) describing and evaluating the formation of economic unions.

The United States since World War II

VUS.14 The student will demonstrate knowledge of economic, social, cultural, and political developments in the contemporary United States by

- a) analyzing the effects of increased participation of women in the labor force;
- b) analyzing how changing patterns of immigration affect the diversity of the United States population, the reasons new immigrants choose to come to this country, and their contributions to contemporary America;
- c) explaining the media influence on contemporary American culture and how scientific and technological advances affect the workplace, health care, and education.

Virginia and United States Government

GOVT.12 The student will demonstrate knowledge of the role of the United States in a changing world by

- a) describing the responsibilities of the national government for foreign policy and national security;
- b) assessing the role played by national interest in shaping foreign policy and promoting world peace;
- c) examining the relationship of Virginia and the United States to the global economy;
- d) examining recent foreign policy and international trade initiatives since 1980.

GOVT.15 The student will demonstrate knowledge of the United States market economy by

- a) assessing the importance of entrepreneurship, the profit motive, and economic independence to the promotion of economic growth;
- b) comparing types of business organizations;
- c) describing the factors of production;
- d) explaining the interaction of supply and demand;
- e) illustrating the circular flow of economic activity;
- f) analyzing global economic trends, with emphasis on the impact of technological innovations.

GOVT.16 The student will demonstrate knowledge of the role of government in the Virginia and United States economies by

- a) analyzing the impact of fiscal and monetary

policies on the economy;

- b) describing the creation of public goods and services;
- c) examining environmental issues, property rights, contracts, consumer rights, labor-management relations, and competition in the marketplace.

GOVT.17 The student will demonstrate knowledge of personal character traits that facilitate thoughtful and effective participation in civic life by

- a) practicing trustworthiness and honesty;
- b) practicing courtesy and respect for the rights of others;
- c) practicing responsibility, accountability, and self-reliance;
- d) practicing respect for the law;
- e) practicing patriotism.

Additional Resources

Offices, Virginia

Agriculture Education

<http://www.doe.virginia.gov/VDOE/Instruction/CTE/ag/>

Business and Information Technology

<http://www.doe.virginia.gov/VDOE/Instruction/CTE/be/>

Career Connections

<http://www.doe.virginia.gov/VDOE/Instruction/CTE/cc/>

Family and Consumer Sciences

<http://www.doe.virginia.gov/VDOE/Instruction/CTE/facs/>

Gender Equity

<http://www.doe.virginia.gov/VDOE/Instruction/CTE/gender.html>

Health and Medical Sciences

<http://www.doe.virginia.gov/VDOE/Instruction/CTE/ho/>

High Schools That Work

<http://www.doe.virginia.gov/VDOE/Instruction/CTE/hstw/>

Marketing

<http://www.doe.virginia.gov/VDOE/Instruction/CTE/me/>

Office of Career and Technical Education Services

<http://www.doe.virginia.gov/VDOE/Instruction/CTE>

State-Recommended Equipment Lists

<http://www.doe.virginia.gov/VDOE/Instruction/CTE/regulations/equipment.html>

Technology Education

<http://www.doe.virginia.gov/VDOE/Instruction/CTE/te/>

Trade and Industrial Education

<http://www.doe.virginia.gov/VDOE/Instruction/CTE/ti/>

Virginia Department of Education

<http://www.doe.virginia.gov>

Offices, United States

U.S. Department of Education

<http://www.ed.gov/>

U.S. Department of Labor

<http://www.dol.gov>

Bureau of Labor Statistics

<http://www.bls.gov/>

U.S. Office of Vocational and Adult Education

<http://www.ed.gov/about/offices/list/ovae>

CTE Resource Center Print and Online

CTE Resource Center

<http://www.cteresource.org/>

Career Investigation: Phase I: VERSO

Career Interpretation: Phase II: VERSO

Career Application: Phase III : VERSO

Career Planning Guide (CPG)

<http://www.cteresource.org/cpg>

Education for Employment Cooperative Education I, II: VERSO

Education for Employment Introduction: VERSO

Education for Employment Level I, Level II: VERSO

Entrepreneurship Curriculum Guide: VERSO

Leadership Curriculum Guide: VERSO

Enhancing Workplace Readiness Skills: VERSO

Teaching Virginia's All Aspects of Industry: Print and VERSO

CTE Resource Center Library Items

CE103.050 *The Basics: Skills You Need to Keep Your Job*

CE101.143 *Career Targets: Career Exploration and Educational Planning Guide*

AV420.006 *The "E" in Me—The Entrepreneur in You*

CE102.151 *Job Connection: Tools to Land the Job You Want*

CE101.134 *Job Shadow Guide for Staff*

CE101.135 *Job Shadow Guide for Students*

CE102.130 *Necessary Skills for the Workforce: Job Readiness*

CE101.149 *New College Admission Procedures: Implications for Career-Related Learning in High School*

CE102.132 *The School-to-Work Planner: A Work-Based Learning Guide*

BS130.030 *Stargazers: Women in Science and High Technology Careers*

Career-Focused Web Sites

America's Job Bank

<http://www.jobbankinfo.org>

Best Jobs in the USA Today

<http://www.bestjobsusa.com/index-jsk-ns.asp>

Blue Collar and Proud of It

<http://www.bluecollarandproudoft.com>

Business & Economics: VaStat (a variety of online Virginia statistics)

<http://www.coopercenter.org/econ/VASTAT/>

Careerbuilder.com

<http://www.careerbuilder.com>

CareerConnect (Virginia's One-Stop Workforce System)

<http://www.careerconnect.state.va.us>

Career Guide to Industries

<http://www.bls.gov/oco/cg/>

Careers in Government

<http://www.CareersInGovernment.com>

Career Prospects in Virginia

<http://www.careerprospects.org>

CTE Resource Center

<http://CTEresource.org>

Employment and Training Administration

<http://www.doleta.gov/>

KnowHow Virginia

<http://www.knowhowvirginia.org>

Kuder: Virginia Career Planning System

<http://va.kuder.com>

Monster Jobs

<http://www.monster.com>

Occupational Outlook Handbook

<http://www.bls.gov/oco/>

O*NET (The Occupational Information Network)

<http://online.onetcenter.org>

r u ready?

<http://www.readyva.com>

Saludos.com (Bilingual Hispanic Jobseekers)

<http://www.saludos.com>

State Council of Higher Education for Virginia

<http://www.schev.edu>

States' Career Clusters

<http://www.careerclusters.org>

Virginia Community College System

<http://www.vccs.edu>

Virginia Career Resources Network

<http://www.vacrn.net>

Virginia Career VIEW

<http://www.vacareerview.org>

Virginia Employment Commission

<http://www.vec.state.va.us>

Virginia Jobs

<http://www.working925.com>

Virginia's Electronic Labor Market Access

<http://velma.virtuallmi.com>

VTECS and Career Clusters

<http://www.v-tecs.org/careerclusters.htm>

Virginia CTE Student Organizations**Virginia DECA**

<http://www.lions.odu.edu/org/deca/>

Virginia FBLA/PBL

<http://www.vafblla-pbl.org>

Virginia FCCLA

<http://www.virginiafccla.org>

Virginia FFA

<http://www.vaffa.org>

Virginia HOSA

<http://www.vahosa.org/>

Virginia TSA

<http://www.vatsa.org>

Virginia SkillsUSA

<http://www.vaskillsusa.org>

ready or not: *Order Form*

Offers an infusion unit for teachers to use at any level, focused on amplifying the information in *ready or not*?. Includes lesson plan resources, activities, and discussion questions related to Virginia's 16 career clusters. Gives teachers a quick orientation to career planning to spark the student's discovery of potential occupations.

DID YOU KNOW

- ☐ Good career choices are often the result of rigorous career education and planning?
- ☐ Critical thinking, team work, and problem solving are essential for career success?
- ☐ Students who use *ready or not* can take self-assessment tests and complete in-depth research on any number of career clusters and job titles?

Order Now

ready or not features

- ☐ Up-to-date resources, including Web addresses
- ☐ Online research project ideas
- ☐ Related Academic Standards of Learning
- ☐ Handouts and activities

- ☐ Please send me a copy of *ready or not*.
Catalog # 5.08.01

Date _____

Name _____ Title _____

School/School Division _____ Instructional Level _____

Address _____

City, State, Zip _____ Phone _____

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